CHILDREN'S TELEVISION WORKSHOP • APRIL 1984 • $1.50

enter™

THE WORLD OF COMPUTERS AND NEW TECHNOLOGY

WIN A COMPUTER!
ENTER Our 'Face-Off' Contest

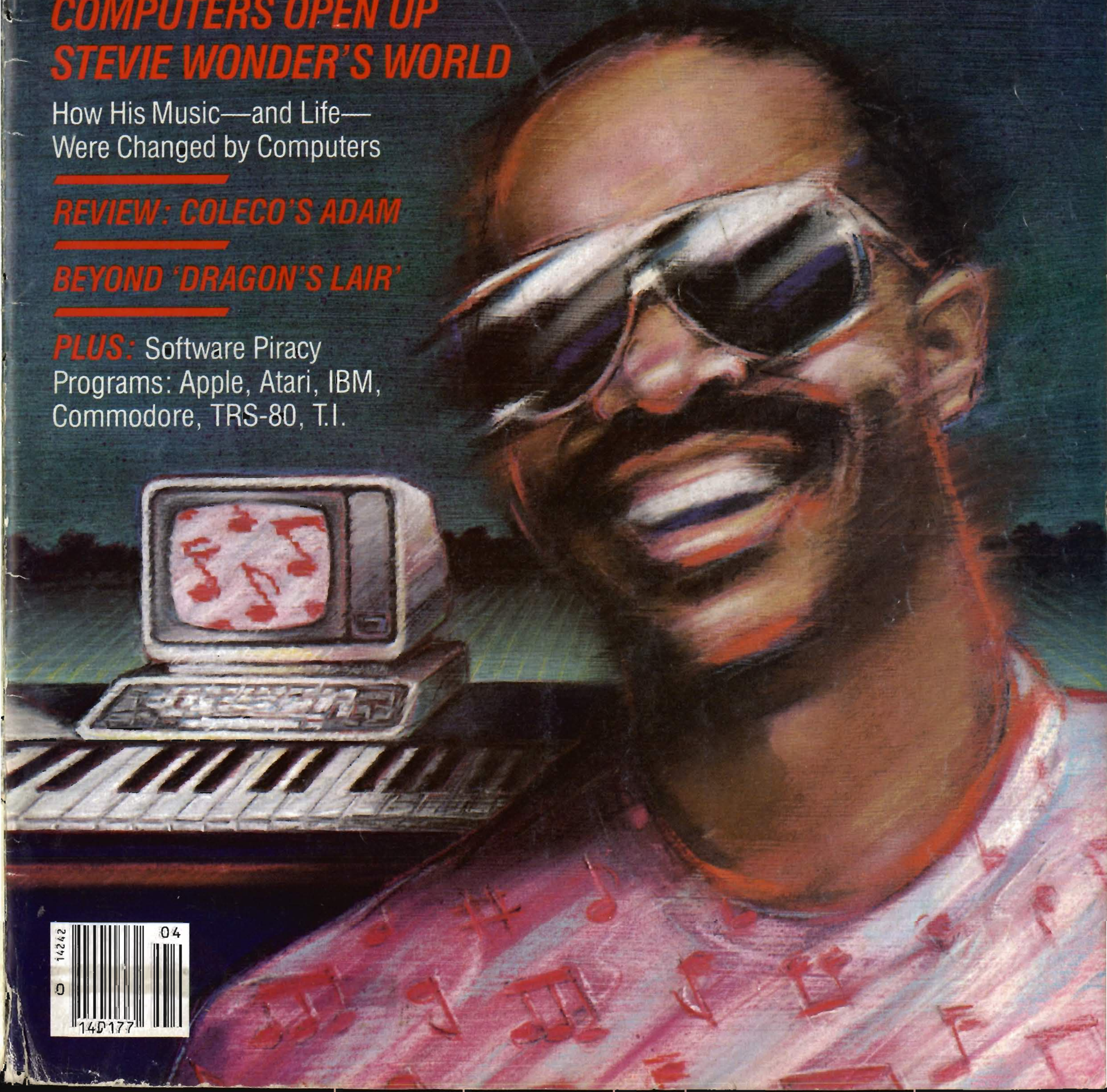
COMPUTERS OPEN UP STEVIE WONDER'S WORLD

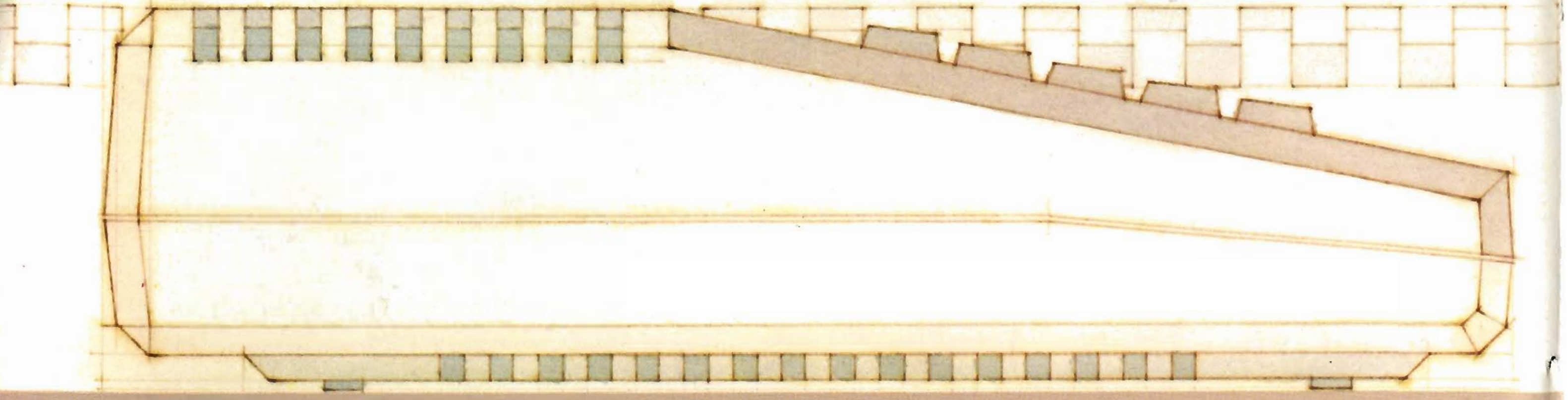
How His Music—and Life—
Were Changed by Computers

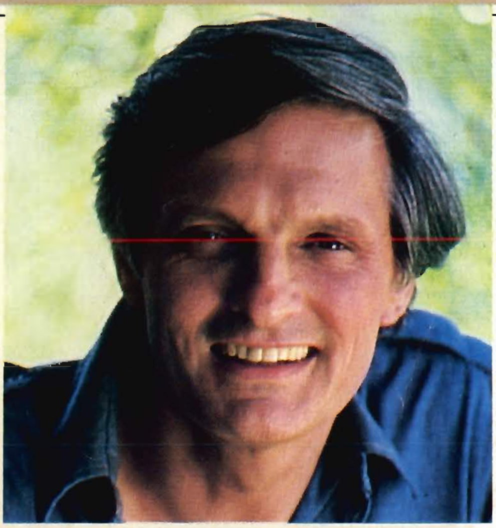
REVIEW: COLECO'S ADAM

BEYOND 'DRAGON'S LAIR'

PLUS: Software Piracy
Programs: Apple, Atari, IBM,
Commodore, TRS-80, T.I.

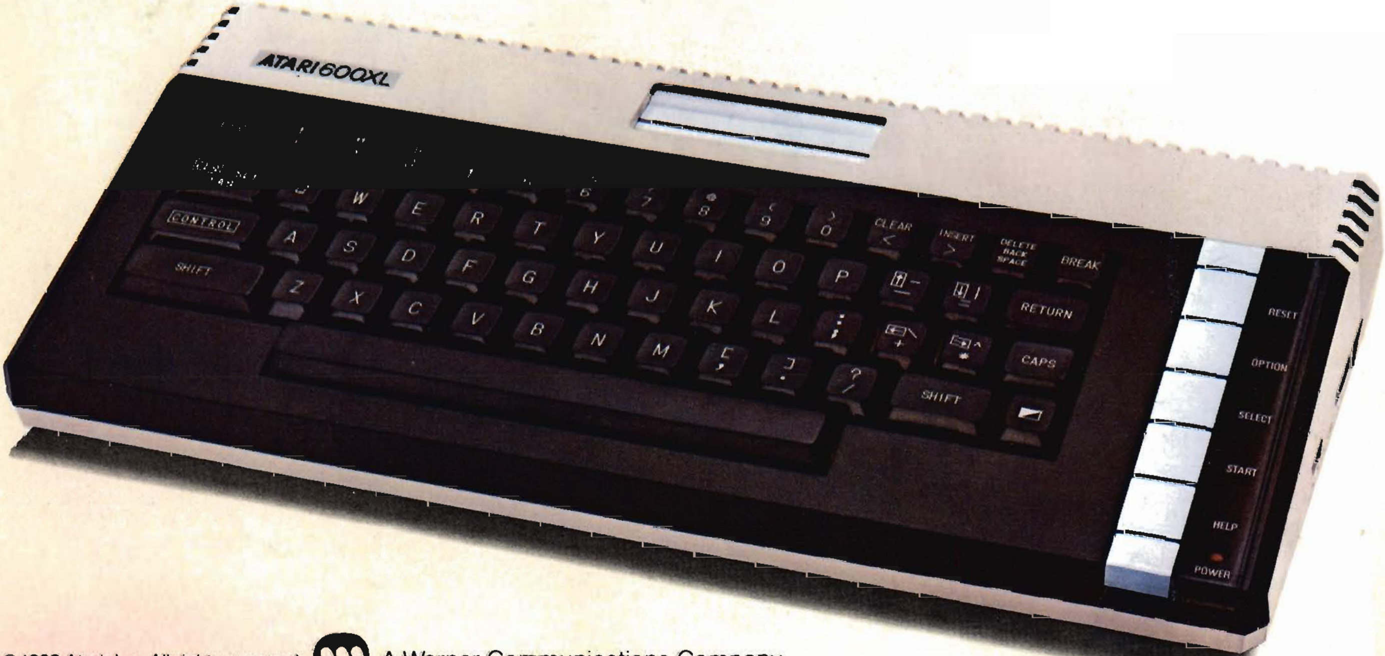






Computer enthusiast Alan Alda uses the ATARI 800XL Computer System. Alda reports: "It's going all the time!"

Introducing the Atari® XL Home Computers: We made them smart enough to know you're only human.


ATARI 600XL
RESET
OPTION
SELECT
START
HELP
POWER

© 1983 Atari, Inc. All rights reserved. A Warner Communications Company.

The new ATARI XL Home Computers prove that you can blend state-of-the-art technology with good old fashioned friendliness. What's a friendly computer? For one thing, it's a computer that speaks your language. Both the new ATARI 600XL™ and the new ATARI 800XL™ Computers come with a built-in BASIC language that uses the same simple English you use to converse with the rest of the world.

Press the HELP button, not the panic button.

Every ATARI XL Computer comes with a HELP key. Something you won't find on any other home computer. New programs are becoming available that let you use this key for helpful "prompts" when you're unsure of what to do next. Press another special key and your ATARI XL automatically performs a self-diagnostic check—a feature that can save you a needless trip to one of our more than 1,000 ATARI Service℠ Centers.

The ATARI 600XL: It Gets Smarter As You Do.

With 16K of memory, the inexpensive ATARI 600XL can handle over a thousand programs: including education, home management, word processing and personal development. Like all ATARI Home Computers, it gives you 256 colors, four sound channels and Atari's unsurpassed graphics. But unlike a lot of other computers, the ATARI 600XL is ready to grow when you're ready to grow. Every ATARI XL Computer is fully compatible with every ATARI peripheral ("peripherals" are added on to expand what your computer can do).

ATARI peripherals include: a low-cost, letter-perfect printer for word processing. A telephone modem that lets you use your telephone to connect your computer to other computers thousands of miles away. A disk drive and a cassette recorder to store data. And Trak—Balls™ and joysticks to use with Atari's unequalled lineup of great arcade hits. An ATARI 600 XL Computer can be turned into a very brainy 64K computer at a very affordable price.

The ATARI 800XL: Power Enough For Over 2,000 Programs:

With 64K of built-in memory (as much as the more expensive Apple and IBM computers), the ATARI 800XL can take on any of over 2,000 software programs. That's five times as many as a Commodore 64.

There's VisiCalc®[1] for electronic spreadsheets—faster than the fastest accountant. The Home Filing Manager™ to help keep track of everything from medical records to phonograph records. Family Finances to keep up with your cash flow. Educational programs like "Juggles' Rainbow"[2] that helps preschoolers develop skills necessary for recognizing the alphabet. Even "An Invitation To Programming,™" for learning how to program.

When You've Got Our Computer, You've Got Our Number.

If you ever find yourself stuck, or have any questions at all, just give us a call. 800-538-8543. (In California, 800-672-1404.) Feel free to talk it over. Because if there's anything friendlier than an ATARI Home Computer, it's the humans who make them so friendly.

You'll do more with Atari Home Computers.

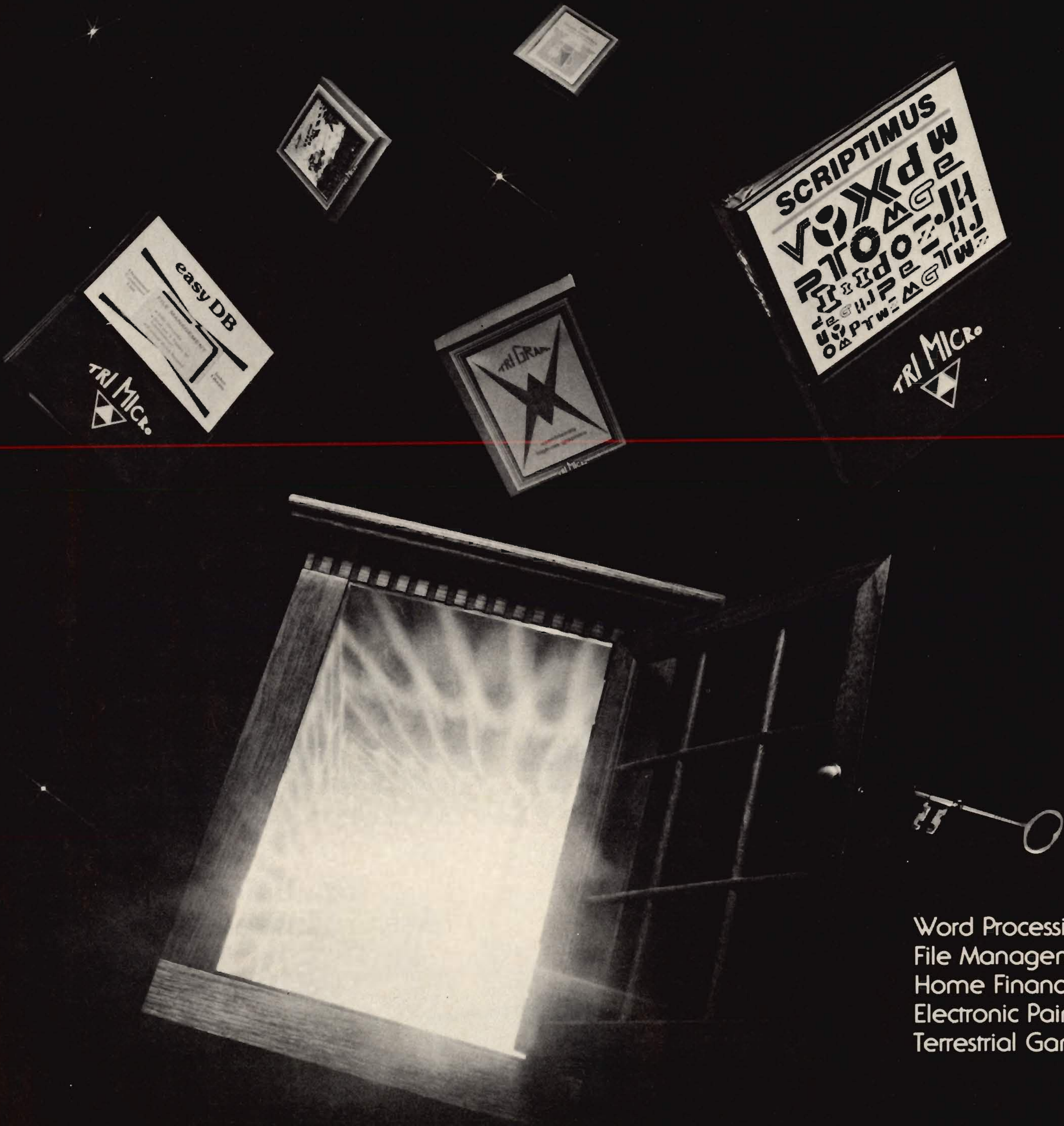
ATARI 800XL
RESET
HELP
OPTION
SELECT
START
POWER

---

[1] VisiCalc is a registered trademark of VisiCorp.
[2] Trademark of The Learning Company.

THE MASTER KEY

unlocks the door to the Commodore 64


SCRIPTIMUS
TRI MICRO
easy DB
TRI MICRO

Word Processing
File Management
Home Finance
Electronic Paintbrush
Terrestrial Game

The Gateway to Five Worlds 129.95

TRI MICRO

International Tri Micro
1010 N. Batavia Ste. G
Orange, CA 92667
714-771-4038

MENU

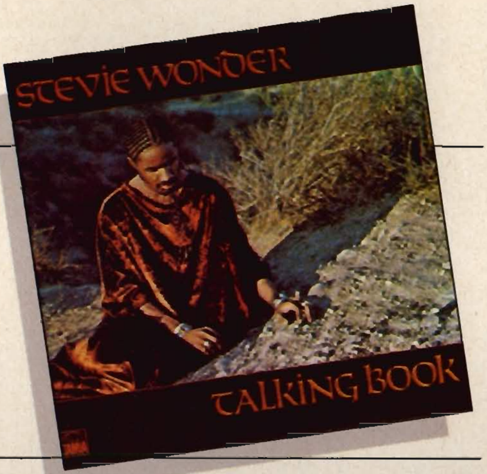
enter

APRIL 1984

VOLUME 1, NUMBER 6

FEATURES

STEVIE WONDER 24
Superstar Stevie's music—and his life—have been changed by computers. An in-depth interview, with a sneak preview of his new album, *People Move Human Plays*.



TALKING BOOK 30
A breakthrough machine lets Stevie Wonder and other blind people "listen" to any book.

HOT COPIES 34
Copying software: Is it smart? Or is it stealing? What do you think?

ALL ABOUT ADAM 40
ENTER's hands-on review tells you whether Coleco's ADAM is a breakthrough or a bust.

BEYOND 'DRAGON'S LAIR' 42
Animator Don Bluth debuts 'Space Ace' and previews his 'Dragon's Lair' sequel.

BOSTON'S BIZ KID 48
A 13-year-old's tiny computer club has now become the world's largest user group. How did Jonathan Rotenberg do it?

DIGITIZED CONTEST 52
Place that face and win a home computer and a library of software.

DEPARTMENTS

FEEDBACK: Our readers write. 5

BITS: Byte-sized news briefs. 6

ASK ENTER: Our Help-Line. 8

RANDOM ACCESS: A teenager teaches other kids about computers. 10

USER VIEWS: Phil and Bernie get a hold on handheld games. 12

NEWS BEAT: Computer Updates. 16

SHOW BEAT: Entertainment News. 18

PACESETTERS: Real Whiz Kids. 20

CONNECTIONS: Resources. 22

BASIC TRAINING: Programming. 55

PENCIL CRUNCHERS: Word Scramble. 62

NEXT: Coming attractions and puzzle answers. 64

Cover: Illustration © Scott Reynolds.

INSIDE STORY

ENTER is growing. Changing. Becoming, we think, better and better—thanks to you.

We're only six issues old, but already our readers are helping shape the magazine. You've written us hundreds of letters, stating what you like and don't like. We've tried to respond quickly. You can see some of the changes in this issue.

We've started a news section that will get you late-breaking information. *News Beat* will tell you about the newest developments in computers and games. *Show Beat* will report on how computers are changing movies, music and popular culture. *Pacesetters* will keep up with kids doing exciting things with high technology. And *Connections* will help you make—well, connections.

We hope you've already noticed the growth of *BASIC Training*. We now cover six computers. We'll cover more. Programs will appear soon for the Timex/Sinclair. And it's not going to be just *BASIC* training. We're going to include other programming languages, like Logo and Pascal. And we've even got a few surprises in our data bank. (Speaking of which, ENTER is on-line. If you're hooked into The Source or CompuServe, you can communicate with us electronically. See *Feedback* for details.)

You'll also notice our new hardware reviews. This issue, 17-year-old Greg Trautman and ENTER tech editor Richie Chevat report their experiences working on Coleco's new Adam computer. In coming issues, we'll give you in-depth reviews of the IBM-PCjr, the Timex/Sinclair 2068, and other important new machines.

We've changed our look a little, too. If our departments seem different to you, you're right. When we added the new features, we decided to streamline our headlines. We hope you like them.

ENTER is growing because our readers are growing. Keep writing and telling us what you want to read about, what you want us to provide, and what your feelings are—good and bad—about playing, working and creating on your computer.

Let us know. ENTER is your magazine.

Ira Wolfman

Ira Wolfman
Editor

ENTER™

VOL. 1, NO. 6, APRIL 1984 © 1984

Publisher
Nina B. Link

Editor
Ira Wolfman

Art Director
Jaye Medalia

Senior Editor
Jim Lewis

Managing Editor
Aura Marrero

Technical Editor
Richard Chevat

Associate Editors
Patricia Berry, Susan Jarrell

Assistant Editor
Elizabeth Hettich

Assistant Art Director
Joan Endres

Contributing Editors
Bernie DeKoven, Fred D'Ignazio, Mike Edelhart,
Jeff Nilson, David Powell, Phil Wiswell

West Coast Editor
Susan Meyers

Editorial Consultant
Andrew Gutelle

RESEARCH

Research Director/Publications Madeline Boskey-Olsen

Assistant Director Michele Freck

Researcher Andres Henriquez

BUSINESS

Business Manager John G. Colson

Circulation Director Lynn Russolillo

Subscription Fulfillment Manager Lucille Friedman

Production Director Carlos N. Crosbie

Assistant Production Manager Kathy Lee

ADVERTISING SALES

Advertising Director Myles Grossman

Advertising Representative Debbie Silverblank

Advertising Coordinator Jayne Porrazzo

ADVISORS

Joan Targ
President/Interactive Sciences, Inc.

Daniel H. Watt, Ph.D.
Author/Educator

CHILDREN'S TELEVISION WORKSHOP

President Joan Ganz Cooney

Executive Vice President David V.B. Britt

President/CTW Products Group William F. Whaley

Vice President and General Counsel Christopher W. Congalton

Vice President/Executive Producer David D. Connell

Vice President/Finance and Administration C. Sue Cushman

Vice President/Community Education Services Evelyn P. Davis

Vice President/Public Affairs Robert A. Hatch

Vice President/Production Alfred Hyslop

Vice President/Periodicals Group Nina B. Link

Vice President/Research Dr. Edward L. Palmer

ADVERTISING SALES OFFICES
Myles Grossman/Advertising Director
ENTER Magazine
One Lincoln Plaza
New York, NY 10023
(212) 595-3456

Western Sales Representative:
George O'Callaghan Inc.
616 Ramona St. #20
Palo Alto, CA 94301
George O'Callaghan/Don Farris
(415) 327-4100

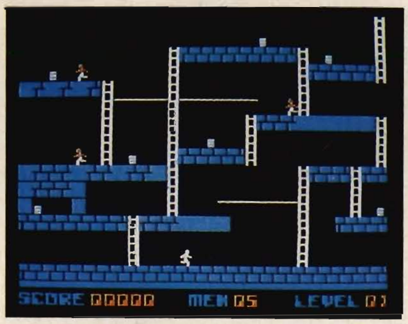
Applied for membership, Audit Bureau of Circulations.

ENTER is a publication of the Children's Television Workshop, published ten times during the year. Volume 1, Number 6, April © 1984 Children's Television Workshop. All rights reserved. No contents may be reprinted without permission of the Children's Television Workshop. ENTER is a trademark of the Children's Television Workshop. Application to mail at second class postage rate is pending at New York, New York and at additional mailing offices. Postage paid at New York, N.Y., and at additional mailing offices. Printed in the U.S.A. Editorial offices, 1 Lincoln Plaza, New York, N.Y. 10023. **Send subscription orders and change of address notices (including label from cover of magazine) to ENTER, One Disk Drive, P.O. Box 2686, Boulder, CO 80322.** Subscriptions: 1 year: U.S.A. $14.95, Canada and other countries $22.95.

FEEDBACK

TELL ME A SECRET

I have recently purchased *Lode Runner* by Broderbund for my Commodore 64. In your February '84 "User Views" column, you said that there was a full-screen secret message in one of the levels. Which level is it?



—Tony Church
Adrian, MI

Dear Tony:

Ah, c'mon. You don't really want us to give it away, do you Tony? If you've read the rule book you know that there's a cheat key with which you can go to every level. Why not use the cheat key to take you beyond the levels you've gotten to on your own? If you've reached level 30 but can't get past it, use the cheater to get you to 31, and so on. This may be time-consuming, but we're sure you'd prefer finding the message on your own. Go for it!!

DON'T FORGET VIC

In your February 1984 edition of "Basic Training" you said the *Search* program was for the TRS-80 and Commodore 64. But it also works on the Vic 20.

—Davis Satcher
Groves, TX

TERMINAL CONFUSION

I'm confused! Every day I run into more words I don't understand. I really enjoy your magazine, and I'm hoping you'll put a page of computer words and definitions in it. I am not a computer expert so it would help a lot. I am trying to help teach my mom so it would help her, too.

—Leslie Leshen
West Mifflin, PA

P.S. In your February '84 issue you received a letter from a Mr. Melvin Fountain, age 51, who read your magazine. He thought he was too old for ENTER. Well, my dad is 62 years old and when my magazine comes, I don't get it right away because my dad has it. I think he likes it more than the newspaper!

Dear Leslie:

We know that there are always going to be readers who won't know every term, so we try and define the most difficult ones whenever we use them. We're always looking for ways to make ENTER better, however, and if enough readers feel that they'd like a "definitions" column, we'll start one up.

In the meantime, we'd suggest you try a bookstore. There are a number of low-priced, paperback computer dictionaries that are helpful: The New American Computer Dictionary *by Kent Porter (Signet),* The Illustrated Computer Dictionary *by Les Cowan (Enrich/Ohaus), and* A Dictionary of Computer Words *by Robert W. Bly (Dell).* —Ed.

ADAM'S APPLE

I'm getting the Adam computer. Are you going to have any programs for the Adam in "Basic Training?"

—Karen Sherma
Emmaus, PA

Dear Karen:

Programs written in Applesoft™ BASIC, like the ones in ENTER for the Apple II and IIe, will run on the Adam, according to Adam's creator, Coleco, Inc. To learn more about the Adam, see the review in this issue.—Ed.

WRITE TO ENTER WITH YOUR COMPUTER

There are now two ways to send electronic mail to ENTER. Last month, we told you how to contact us through The Source. Now, we can get messages from those of you who subscribe to CompuServe. Our CompuServe ID is 72456, 1776.

In case you didn't see it last issue, our ID number for The Source is BBI113. Drop us an electronic line. The next time we type GO EMAIL, we expect to see messages waiting.

(Continued on page 63)

BITS

CHOCOLATE CHIPS

What does a cookie king cook up when computers capture his customers' attention? David Liederman, owner of the David's Cookies chain, turned to ice cream—*computer-designed* ice cream, that is.

David's Ice Cream's special ingredients include chunks of fruit, nuts, Swiss chocolate or crumbled cookies that are put into your cone or cup upon request. That's where the computer, which runs the "chunk-in machine," comes in.

The chunk-in machine measures the consistency of the ice cream and chunk mix. The computer tells the machine to stop when the mix is just soft enough for your taste buds.

Peanut Crunch is David's current top-rated flavor. There are no plans to introduce Chocolate Microchip.

ILLUSTRATIONS © MARY LYNN BLASUTTA

QUICK BYTES

Is a cheese doodle the closest you get to a dairy product? Is a brownie in one hand and ice cream in the other your idea of a balanced diet?

Then it might be time for you to log on to a healthier diet. *Grab-a-Byte* from the National Dairy Council, and *Nutri-Bytes* from the Center for Science In Public Interest, are two software programs with menus just for you.

Grab-a-Byte, for Apple II and IIe computers, includes food games like Grab-a-Grape and Nutrition Sleuth, which quiz you with health questions. *Nutri-Bytes* (for CP/M and Apple computers) provides information about food additives and analyzes the nutritional values of the food you eat.

If you must eat junk food while using these programs, at least try to keep the brownie crumbs off the keyboard!

ON-LINE JUNKYARD

Know anyone who needs a fender for a 1949 Studebaker? How about an axle for that Plymouth Falcon on blocks in the backyard? Ask Norm. If he can't locate it, he knows a computer that probably can.

Norm is Norm Horton, Jr.—as in Norm's Auto Parts of St. Paul, Minnesota. And Norm is creator of the "Data Parts Locating Network." This computer network lets on-line auto junkyards know what's available at other Network yards around the country.

A Network spokesperson says this system may one day help lower car insurance payments by making it easier to locate unusual car parts to make repairs.

All we want to know, Norm, is this: what do you have in a rumble seat—say, in BASIC black?

HOOKEY HOOK-UP

It's getting to the point where a kid can't play hookey anymore. At one school, they've even got a computer to check up on kids.

At West Hill High School in Stamford, Connecticut, the principal has installed a $5,000 computer called Telsol just to catch unexcused absentees. During the evening—when parents are most likely to be around—the computer calls the homes of students who were absent. A computer voice explains that the student was out and asks for the reason. The parents' response is recorded. If there's no answer, or if the person who answers hangs up right away, Telsol calls again later in the evening.

The absentee rate at West Hill has gone down since Telsol came on-line. That's what happens when high-tech hits the high schools.

J-T-V

Jukeboxes are joining the video generation. When you plunk two quarters into the new Startime Video Jukebox, you don't just get 3½ minutes of your favorite pop tune. Before you can say "MTV," the jukebox's 25-inch screen lights up with a video of the performers in action. Your local pizza palace, arcade alley or dance-teria may not have a video jukebox in place, however. Only 300 machines have been sold so far.

Even if you're not a big fan of rock videos, you'll have a good reason to pump quarters into the Video Jukebox. When it's not busy playing hits, the jukebox plays—you guessed it—non-stop video advertisements.

SATELLITE FISHES

Charlie the Tuna won't like this *Bit* one bit. A computer program has been developed that pinpoints the best fishing areas along the California coastline.

University of Southern California professor Gary Kleppel knew that many large fish could be found in the boundary areas between warm and colder water, where they feed on smaller fish and plants. So, Kleppel developed a program that takes information from NASA weather satellite pictures and uses a computer to locate these boundary areas. With this information, fishermen can head for those schools of catchable fish.

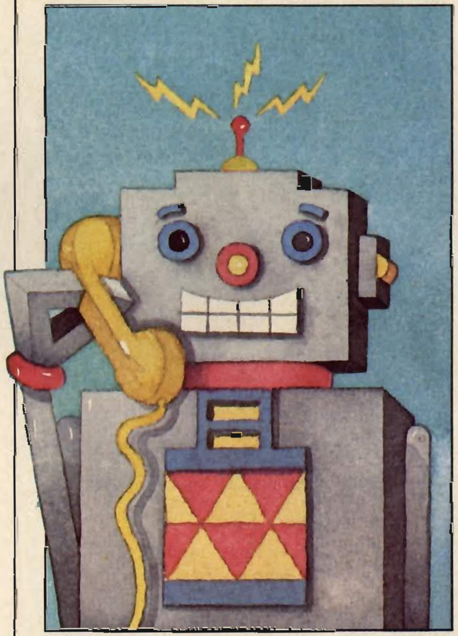
Kleppel hopes he will soon be able to give fishermen up-to-the-hour underwater traffic reports. Sounds pretty fishy to us!

IF A MAN ANSWERS, HANG UP!

You've heard of person-to-person phone calls, but how about robot-to-robot? A RB5X robot in Columbus, Ohio, made robot history when it placed a phone call to another RB5X robot in Denver, Colorado, last fall. It was all part of a demonstration sponsored by the RB Robot Corporation.

As planned, the robot in Columbus was supposed to tell its twin in Denver to perform some simple task, like turning in a circle. The robot in Denver would then do the task and report back to the Columbus robot.

Unfortunately, the company hadn't foreseen one possible bug in the day's program. Old telephone lines produced so much static that the robot's digital dialogue was interrupted. Well, you know what the operator says: "Will you please hang up and dial again?"



We want BITS! Be on the lookout for high-tech news items. If you're the first with information that leads us to a Bit, we'll send you an ENTER t-shirt. Send your news item to: "Bits Editor," ENTER, 1 Lincoln Plaza, New York, NY 10023.

ASK ENTER

BY DAVID B. POWELL

ONE DRIVE OR TWO?

DEAR ENTER: Why do most computers use two disk drives?

—Kevin Walters
Houston, Texas

DEAR KEVIN: Quite a few don't. In fact, on many computers, if you just want to write a program and run it, you don't need a disk drive at all. Even if you want to use disk software, or save your program on a disk, you still don't need *two* drives. It all depends on your machine and what you want to do.

In some cases, two drives are necessary, or at least very helpful. Word processing is a good example of an application that often requires two disk drives. While one drive reads the word processing software, the other holds the disk that you are writing on. On some computers, one drive must always hold the operating system. This means you'll need another drive for some uses. And of course, two drives are necessary if you want to copy a disk.

CASSETTE vs. DISK

DEAR ENTER: If I were to get a computer using a cassette recorder, what advantages over a disk drive would I have?

—Wayne Winbler
Valley City, ND

DEAR WAYNE: The main advantage of a cassette recorder over a disk drive is that recorders are much lower priced. You can use a cassette for many of the applications for which you would use a disk. But prices on cassette recorders start around $60, while a disk drive will cost $250 and up.

Some computers will let you use any brand cassette player—the same player you use to play music cassettes—and you can save even more money that way.

Tapes do have several disadvantages, though. They are much slower and less convenient than disks. And, the software you want may not be available on tape. These are both important considerations when choosing which kind of storage you will invest in.

THE 'BEST' COMPUTER?

DEAR ENTER: Is the Commodore advertisement on TV true—that all leading computers pick the Commodore 64 as the best computer?

—Creighton Ikeda
Kaneohe, Hawaii

DEAR CREIGHTON: Well, it all depends on what you mean by "pick" and "best." When we asked Commodore what *they* meant, they referred us to Ally & Gargano, the ad agency that made the commercial. Ally & Gargano told us that they created a small BASIC program that evaluated leading computers, and ran it on all the computers you see on the commercial. Each of the competitors did indeed "pick" the Commodore as the "best," the agency says. So technically, the ad is accurate. But when we asked *what* the program did, it became clear that the ad was a bit misleading.

No computer has a concept of "best" beyond what is programmed into it. In this case, each computer was programmed to select the computer that gave the most RAM memory per dollar.

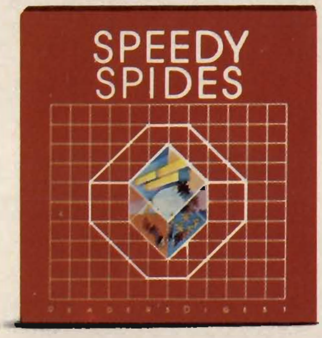
Now, is your definition of best the same as the ad agency's? Maybe yes, maybe no. The amount of RAM is just one of the things you look at when you buy a computer. Other factors the program did not take into account are software availability, ease of use, quality of screen display, color, sound, keyboard configuration and expandability.

Choosing the "best" computer is a personal decision. Unless you program a computer to evaluate *your* needs, it won't give you a very helpful answer.

If you have a question about computers or video games, we'd like to help. Just send your questions to: Q&A, ENTER Magazine, CTW, 1 Lincoln Pl., NY, NY, 10023.

DAVID POWELL is an ENTER contributing editor.

INTRODUCING QUIZZES, CONTESTS AND SPIDERS.



Maybe computer quizzes haven't made it to your list of all-time game favorites yet. But Speedy Spides™ is different.

First, it gets a couple of swinging spiders in on the act. And second, two kids can pounce on words, or zero in on numbers, together. In direct competition! If neither player speeds a spide to the correct answer, the program supplies it. You can play Speedy Spides alone, too, but the thrill of the contest makes it even better. There are nine fact files on the disk—plus a big bonus editor that lets you enter up to 26 new quizzes into play. On almost any subject. So any-brainy-body in the family can play.

Reader's Digest Software™ created Speedy Spides to help take the bugaboos out of learning. And to give everybody at home a chance to play a fact-and-fun filled game together. Look for it at your software store or call Customer Service at 800/431-8800. (In NY, AK, HI: 914/241-5727.)

Warranty information available upon request by writing to: Reader's Digest Services, Inc., Microcomputer Software Division, Pleasantville, N.Y. 10570.

Speedy Spides runs on Apple®II, II Plus, IIe: 48K and disk drive and Commodore 64™ and disk drive. Use of paddles optional.

SOFTWARE GOOD ENOUGH TO GO OUT AND BUY A COMPUTER FOR.

READER'S DIGEST

Apple is a registered trademark of Apple Computer, Inc. Commodore is a trademark of Commodore Electronics Limited. Speedy Spides and Reader's Digest Software are trademarks of The Reader's Digest Association, Inc.

TEACHING BASICS

BY ANN MEI CHANG

Standing in front of all of those staring eyes made me feel like I was on trial. I'd been looking forward to teaching all summer long. But now that the time had come, I just wanted to get it over with.

I was 16 and an assistant instructor at National Computer Camp in Orange, Connecticut. The campers I was teaching were as old as 15. I was very nervous about getting up in front of them. What if they didn't understand anything I said? I'd be really disappointed if the class was a failure.

I was teaching the group Assembler—a fairly complex language that's used in serious programming. I was nervous, but I wasn't unprepared. After three years of working with computers, and after spending two weeks at National the previous summer, I knew my subject. But would I be able to explain it to other kids?

I made it through that first class, though it seemed to take forever. After I got over my initial jitters, I began to enjoy teaching. It was fun telling other kids about computers. And it made me feel great when they caught on and made progress. It was kind of strange, though, to see my friends look at me as if I were a leader.

But perhaps the thing that surprised me most is how much *I* learned—about computers and people—by teaching those classes at camp. Looking back, I see I've learned at least three important principles.

© DEBORAH FEINGOLD

Leading a class on Assembler, Ann Mei learned as much as she taught.

1. *Anyone can learn to program if he or she just tries.* A good attitude makes all the difference in the world. Programming can be really frustrating, especially for beginners who aren't comfortable with computers. Yet some of the kids I taught gave up much too easily when they hit a problem. But if they kept at it, the students could usually solve the problem.

2. *Girls are as good at computers as boys are.* While there were fewer girls than boys at National Computer Camp (the ratio was about five boys to one girl), those that I taught were every bit as good as the boys at programming. Three of the eight kids in my class were girls. These girls were just as quick to catch on to difficult concepts as the boys were. Of course, that didn't surprise *me*.

3. *You've got to be willing to work if you're going to learn.* Probably the hardest part of my job was trying to teach kids who just didn't want to be taught. They were more interested in playing games or in working independently. In some cases, they didn't want to be there.

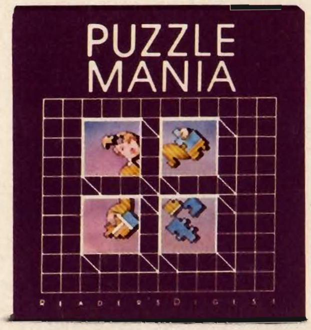
Generally, though, the campers were a good audience. I liked being able to teach them new things about computers.

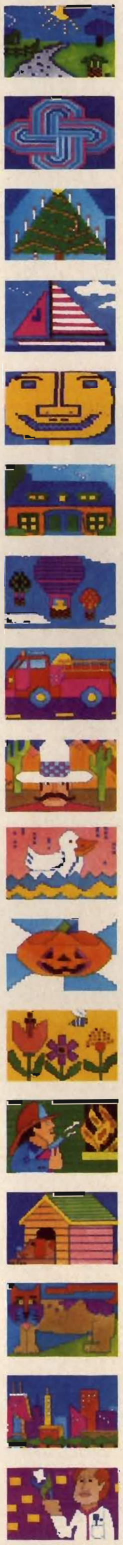
Oh yes, I learned one other lesson. Teaching about computers is a lot harder than programming them. Computers only do what you tell them to. People are never that predictable. ⊡

ANN MEI CHANG, 16, lives in Lincroft, NJ.

INTRODUCING PUZZLE MANIA. 7 GREAT PUZZLES CREATED BY US.

THE OTHERS BY PUZZLE MANIACS.





Puzzle Mania™ is a challenging jigsaw program for puzzle lovers.

Puzzle Mania is also an inspired jigsaw program for puzzle creators.

Because in addition to the seven great puzzles on the disk, you can create your own pictures on the screen, paint them in sixteen different colors and let the program turn them into puzzles to save on a separate disk.

Each Puzzle Mania puzzle (including your own creations) can be played on six levels of difficulty. There's help when you need it. And all turns are tallied. So you can turn the puzzle play into competitive play. If you have to part with a puzzle before it's finished, there's a stop-and-save feature built into the program, too.

Reader's Digest Software™ created Puzzle Mania for kids and their friends and their parents and their grandparents and everybody else who likes fun and games. Look for it at your software store or call Customer Service at 800/431-8800. (In NY, AK, HI: 914/241-5727.)

SOFTWARE GOOD ENOUGH TO GO OUT AND BUY A COMPUTER FOR.

READER'S DIGEST

Warranty information available upon request by writing to: Reader's Digest Services, Inc., Microcomputer Software Division, Pleasantville, N.Y. 10570. Puzzle Mania runs on Apple® II, II Plus, IIe: 48K and disk drive. Commodore™ 64 Machine and disk drive. Color monitor required. IBM® PCjr version available late spring. Puzzle Mania and Reader's Digest Software are trademarks of The Reader's Digest Association, Inc. Apple is a registered trademark of Apple Computer, Inc. Commodore is a trademark of Commodore Electronics Limited. IBM is a registered trademark of International Business Machines, Inc.

USER VIEWS

GETTING A HOLD ON HANDHELDS

BY PHIL WISWELL AND BERNIE DEKOVEN

Handheld electronic games are a mystery.

Why would anyone spend $50 (plus $5 for batteries) on a machine that only plays one game?

You wouldn't buy handheld (or tabletop) electronic games for their game play, which is usually uneven and disappointing. So why buy one at all?

To solve this mystery, we tested some top handheld games. After going through our entire supply of batteries, we came up with the obvious answer: *These games are portable!*

You can get more from a computer or game system, but it's impossible to bring them along on camping trips, long car rides and other travels. If that's important to you, then here are some games you'll want to know about.

◆◆◆

Q*BERT

(Parker Brothers, $55)

*"Q*Bert works very well because it doesn't need smooth animation."* —Bernie

"Agreed. This is one of the best games we looked at."—Phil

Most handheld electronic games create the illusion of screen action by lighting up character outlines located around the screen. Because there are usually so few outlines, the animation appears jerky and uneven. This doesn't matter in *Q*Bert* because it's a game of quick, jumpy animation anyway.

This *Q*Bert* is remarkably faithful to the original arcade version, though it uses a smaller pyramid of cubes. The graphics are done very well, and you can turn off the sound.

This version is tough enough to make Q*Bert say his famous "@!#?@"

WRAP-UP

PHIL: Unless you play *Q*Bert* in the dark, it's hard to tell what's going on. But with the lights off—wow!—it looks great.

BERNIE: This should be a lesson to all tabletop game makers: you have to find the right game for the right machine.

◆◆◆

MS. PAC-MAN

(Coleco, $40–45)

"The two-player variation is a wonderful enhancement of the original game."—Bernie

"I'm quite hooked on the game." —Phil

This game has a number of nice features, not the least of which is an optional adapter that lets you use a wall plug or batteries. We really liked the cabinet, modeled to look like a miniature coin-op. It has a hood to shade the game screen, and remains stable even when you jerk the controls back and forth. And the two miniature joysticks are very responsive. There are three different mazes and the ghosts pick up speed with each board. But the ghosts have no individual personalities and bonus fruits and pretzels are very

MS. PAC-MAN
COLECO
PLAYER 2
PLAYER 1

(Continued on page 60)

SWIG©

SOFTWARE WRITERS INTERNATIONAL GUILD

THE LARGEST PAID MEMBERSHIP PROGRAMMERS GUILD - OVER 5,000 MEMBERS WORLDWIDE!!

SCHEDULED SWIG ACTIVITIES & MEMBERSHIP BENEFITS

(1) $10,000 PROGRAMMING CONTEST (Members only)

(2) NATIONAL COMPUTER WEEK (May 11- May 20, 1984)

(3) ANNUAL CONFERENCE AND SOFTWARE AWARDS CEREMONY (During National Computer Week)

(4) CONSULTANT REGISTRY (With computer store referral system for customized software)

(5) JOB PLACEMENT SERVICE (Free to individual members, fixed maximum fee to companies)

(6) FREE SEMINARS & MEETINGS LOCALLY

(7) SOFTWARE LIBRARY LENDING & EXCHANGE SERVICE (Professional quality assemblers, utilities, games, etc.)

(8) SOFTWARE LOCATION SERVICE (For companies & individuals-if it exists, **SWIG** will find it. If not, see #9)

(9) SOFTWARE DEVELOPMENT SERVICE (From novice to scientist, **SWIG** members can work on any project-from applications to games to R&D)

(10) LEGAL SERVICE

(11) AGENT (**SWIG** can represent you in sales to software publishers)

(12) 24 HOUR - 7 DAY BULLETIN BOARD SYSTEM (BBS) ACCESSIBLE BY COMPUTER FREE

(13) AND MORE!!!!

MEMBERSHIP APPLICATION FOR SOFTWARE WRITERS INTERNATIONAL GUILD

NAME ______________________________

ADDRESS ______________________________

CITY ____________________ STATE __________ ZIP __________

PHONE # (   ) ______________

- CLASSIFICATION:

☐ NOVICE ☐ BEGINNER TO ADVANCED

☐ ADVANCED WITH ON THE JOB EXPERIENCE ☐ RESEARCH/SCIENTIST

- WHAT EQUIPMENT DO YOU HAVE EXPERIENCE WITH &/OR ACCESS TO &/OR PLAN TO BUY?

☐ MAINFRAME ☐ MINI ☐ MICRO ☐ DESIGN/R&D

BRAND NAME(S): ☐ IBM ☐ XEROX ☐ APPLE ☐ TI

☐ COMMODORE ☐ RADIO SHACK ☐ ATARI ☐ OSBORNE

☐ TIMEX/SINCLAIR ☐ NORTH STAR ☐ HEWLETT PACKARD

☐ OTHER ______________________________

- AREAS OF INTEREST:

☐ DATA PROCESSING ☐ BUSINESS APPLICATIONS ☐ GRAPHICS

☐ LEGAL ☐ VOICE ☐ MEDICAL ☐ APPLIANCE (HOME) CONTROL

☐ ROBOTICS ☐ GAMES ☐ MUSIC ☐ R&D ☐ OTHER ______

- MEMBERSHIP ACTIVITIES AND SERVICES OF INTEREST:

READ THE LIST ON THE LEFT AND CIRCLE THE NUMBERS BELOW THAT APPLY.

1 2 3 4 5 6 7 8 9 10 11 12

☐ I HAVE ENCLOSED $20 ANNUAL MEMBERSHIP FEE ☐ CK ☐ MO
(MAKE CHECK PAYABLE TO: **SWIG**)

RETURN TO: **SWIG**
P.O. BOX 87
STONY POINT, NEW YORK 10980
(914) 354-5585

SWIG© SOFTWARE WRITERS INTERNATIONAL GUILD

We're making you the best.

It's a simple promise based on a simple premise:

You'll get the best out of our software because we'll put the best thinking into our software.

You see, CBS Software is developed and written by experts in their fields – leaders in education, graphics, self-enrichment, music, entertainment – to help your computer bring out the best in you.

So now that you've invested in a home computer, you should invest in getting the best out of it.

With CBS Software.

Webster: the Word Game
abcd klmn pqrstuv
CBS
Math Mileage
CBS

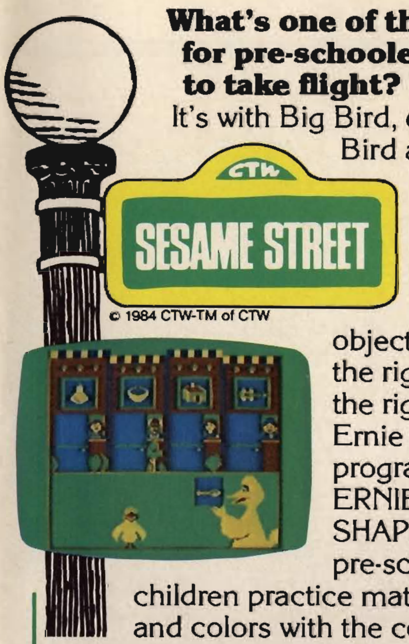
Learning's at its best when it's just plain fun! While WEBSTER: THE WORD GAME™ keeps kids entertained, it's also sure to help spell *success* at school! And as children drive along the MATH MILEAGE™ track, they're also accelerating their math skills!

JAZZ SCATS™ abound with the best sound in town. These cats are cool and their music programs are hot! In COCO-NOTES,™ HALF-TIME BATTLIN' BANDS™ and MOVIE MUSICAL MADNESS,™ you collaborate with the computer to compose unique jazzy melodies. Then the Jazz Scats dance and play them back! What a gig!

© 1984 CBS Inc. CBS Software, A Unit of CBS Inc., One Fawcett Place, Greenwich, CT 06836 (203) 622-2503. © 1984 Children's Computer Workshop, Inc. SESAME STREET and the Sesame Street Sign are trademarks and service marks of Children's Television Workshop. BIG BIRD, LITTLE BIRD and ERNIE are trademarks of Muppets, Inc. JAZZ SCATS is a trademark of the Dovetail Group, Inc., "Apple," "Atari," and "IBM" are registered trademarks of Apple Computer, Inc., Atari, Inc., and International Business Machines Corp., respectively. "Commodore 64" is a trademark of Commodore Business Machines, Inc.

Having CTW in your kids' corner is the best! Now Children's Television Workshop – creators of *Sesame Street, The Electric Company,* and *3-2-1 Contact* – brings its special kind of magic to the computer to help build educational and social skills. In PEANUT BUTTER PANIC,™ as children jump for the stars to power their sandwich machine, cooperation is the key ingredient. Five other programs share the unique CTW recipe that should leave kids hungering for more!

PEANUT BUTTER PANIC
CBS


CTW
SESAME STREET
© 1984 CTW-TM of CTW

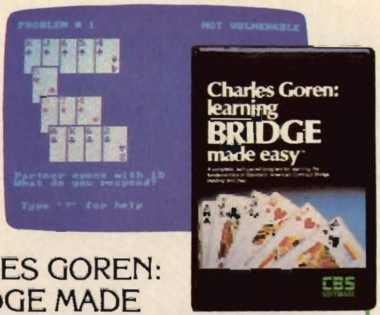
What's one of the best ways for pre-schoolers' skills to take flight?
It's with Big Bird, of course! Big Bird and Little Bird team up in BIG BIRD'S SPECIAL DELIVERY.™ Children have fun recognizing objects and delivering the right packages to the right places. Ernie has his own program, too. ERNIE'S MAGIC SHAPES™ helps pre-school children practice matching shapes and colors with the computer.

The best colleges want the best scores.
MASTERING THE SAT™ and MASTERING THE COLLEGE BOARDS™: ENGLISH COMPOSITION offer the benefits of private tutoring at a fraction of the cost! Created and endorsed by professional educators like the National Association of Secondary School Principals, these multi-disk programs give a thorough review of material and preparation for the exams.

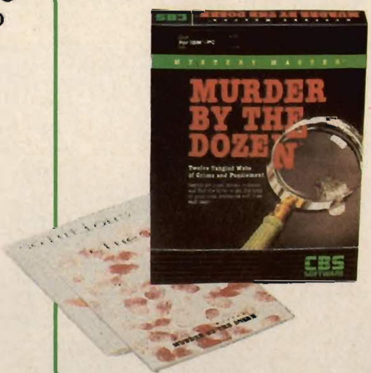
Mastering the College Achievement Tests: English
Mastering the SAT
CBS SOFTWARE

SUCCESS WITH MATH
Addition and Subtraction
CBS

You'll get some of the best skill sharpeners for students—
when they're developed by professional educators themselves. Our SUCCESS WITH MATH™ series is teacher-developed and classroom-tested. Best of all, it allows students to proceed at their own pace.


PROBLEM # 1
NOT VULNERABLE
Partner opens with 1D
What do you respond?
Type '?' for help
Charles Goren: learning BRIDGE made easy
CBS SOFTWARE

Make the best of your leisure time!
World-champion Charles Goren can help you play your best bridge game ever, with CHARLES GOREN: LEARNING BRIDGE MADE EASY.™ Or you can bring out your best deductive reasoning skills as you follow a twisted trail of shady characters and confounding clues to solve twelve whodunits in MURDER BY THE DOZEN.™


MYSTERY MASTER
MURDER BY THE DOZEN
CBS SOFTWARE

Programs that bring out the best in you.
Read and comprehend more in less time with MICROSPEEDREAD.™ This program provides reinforcement, encouragement and feedback through speed-reading techniques tested with both students and professionals. And you can bring out your best management skills with our new MANAGING FOR SUCCESS™ series!

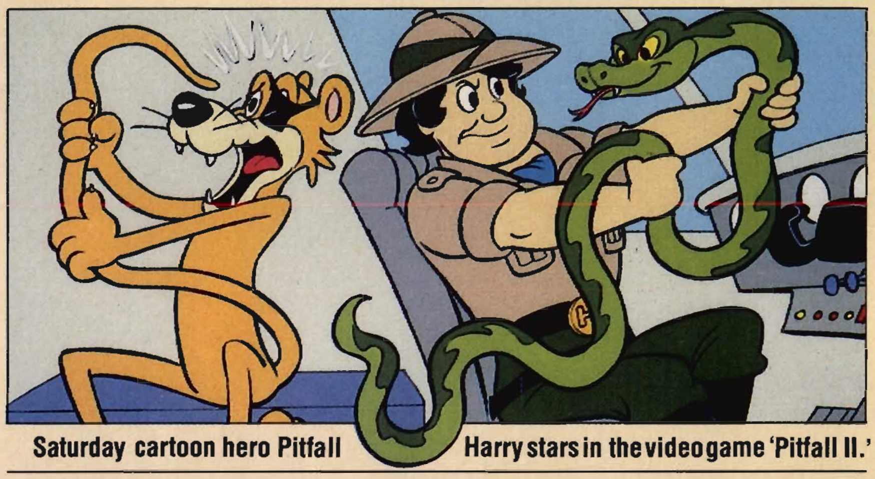
Micro SpeedRead
CBS SOFTWARE

Most CBS Software programs are available for Apple® II+/IIe, Atari® Computers, Commodore 64,™ IBM®-PC and IBM®-PCjr.
Specifically, MATH MILEAGE, COCO-NOTES, HALF-TIME BATTLIN' BANDS and MOVIE MUSICAL MADNESS (Atari, Commodore); PEANUT BUTTER PANIC, BIG BIRD'S SPECIAL DELIVERY, ERNIE'S MAGIC SHAPES (Atari, Commodore, IBM); MICROSPEEDREAD, MASTERING THE SAT, CHARLES GOREN: LEARNING BRIDGE MADE EASY and MYSTERY MASTER: MURDER BY THE DOZEN (Apple, Commodore, IBM); MANAGING FOR SUCCESS and MASTERING THE COLLEGE BOARDS: ENGLISH COMPOSITION (Apple, IBM); SUCCESS WITH MATH (Apple, Atari, Commodore); and WEBSTER: THE WORD GAME (Apple, Atari, Commodore, IBM).

CBS SOFTWARE
Making you the best.

NEWS BEAT

THE RETURN OF 'PITFALL' HARRY



Saturday cartoon hero Pitfall Harry stars in the videogame 'Pitfall II.'

© 1983 RUBY-SPEARS ENTERPRISES, INC. AND ACTIVISION, INC.

"Pitfall Harry is back by popular demand," says designer David Crane. The not-so-daring hero of *Pitfall* returns to the home game screen in *Pitfall II: The Lost Caverns* from Activision for the Atari 2600.

"People can identify with Harry. He doesn't walk through walls—he's only as daring as you are," says Crane. But Harry's a bit more than human in the new game. Despite caverns of buzzards, bats and scorpions, Harry *can't* die. When stung, he's simply transported back to another level. "We just wanted to try something different," claims Crane. "Who says you always have to die when you lose?"

BEAT BITS: You've played the game, now carry the lunch box. *Dragon's Lair* hero Dirk the Daring will soon be on everything from party hats and bubblegum cards to lunch boxes. There's also going to be a home version, with Coleco adding a video disc player to its Adam components later this summer...

Lost in the world of *Zork?* Infocom, maker of *Zork* and other text adventure games, is now offering hint booklets and maps to wayward computer adventurers. They're available where Infocom games are sold. Unfortunately, you'll have to pay for the help... Two-Bit Software of Del Mar, California, has four Timex-Sinclair computer games designed especially for executives. In one, *Go To The Top,* you win by getting a key to the executive washroom...Students at the University of Pennsylvania Medical College play a computer simulation game called *Cupid* to test their medical knowledge...

Has blasting got you bored? Global Learning, Inc. of Montclair, New Jersey, has four new computer games that stress cooperation. Players must help each other to win in *Turnovers* (IBM-PC), *Cooperative Mazegame* and *Harvest Time* (Atari 800, 600XL, 800XL, 1200XL) and *Mountaineering* (Apple II)...What's a bouncing Kamunga? "A cute little furball that rains down from the overcast Dakota Sky," says Penguin Software, maker of a new game called *Bouncing Kamungas* for the Apple and Commodore 64 computers...

DID YOU KNOW: Atari is the official home computer of the 1984 Olympics...World Class Skier Molly Colt worked with Tronix designer Steve Sidely to make the game *Slalom* more like a real ski race...In the game *Frostbite*, the hero must battle the dreaded Killer Clams of the North.

FOR YOUR MACHINE: Imagic will be producing an "enhanced" version of its hit *Demon Attack* for the IBM PCjr. The new version will feature a double screen and "more dynamic game play."...Here's some new software (or new versions of old software) for other computers.

APPLE: *Dino Eggs* from Microlab; *Pooyan* from DataSoft.

ATARI: (For the 5200) *River Raid, Pitfall, Kaboom, MegaMania, Keystone Kapers* and *Beamrider,* all from Activision.

COLECO: See "Atari."

COMMODORE 64: *Solo Flight* from MicroProse; *DROL* and *Loderunner* from Broderbund; *Pooyan* from DataSoft.

IBM PC: *Loderunner* from Broderbund; *Dino Eggs* from Microlab.

TRS-80: *Zaxxon* from Radio Shack.

VIC-20: *Loderunner* from Broderbund; *Ultima II, Flip-N-Match, Cannonball Blitz, Jawbreaker, Threshold, Crossfire, Lunar Leeper, Creepy Corridors* and *Frogger,* all from Sierra On-Line.

NEW PRODUCTS: C.E.S. NEWS

DATELINE: Las Vegas, Nevada—More than 80,000 people gathered in the hot desert sun to get a first-hand look at the hottest new technology. The latest hardware and software was everywhere at January's four-day winter Consumer Electronics Show (CES).

Here's a quick look at some of the exciting things introduced at the show. We'll cover a lot more about CES in next month's *NewsBeat.*

ELECTRONIC GAME DELIVERY means you can teach old software new tricks. Three new companies—*Romox*, *Xante* and *Cumma Technologies*—introduced systems that let you re-program cartridges or disks to play new games.

Here's how it works: You buy a blank cartridge or disk, plug it into the special machine (that will be at places where software is sold), select a game, pay your money and —"in four minutes or less"—you've got your game. When you get tired of that game, just bring the software back and have it reprogrammed with something better.

"It's the ultimate in Coke machines," jokes Eliot Dahan, whose Creative Software Company will distribute some of its games via these new systems.

HARDWARE AND PERIPHERAL NEWS: *Commodore* made the biggest splash at the show by introducing its newest home computer, the 264. The company expects it to be available in the second half of 1984. The 264 will come with different packages of built-in software (including word processing and business spread sheets), and will retail for around $500...*Coleco* is backing the *Adam* datapack with new deals for dozens of titles of third party software. They also announced plans for an Adam modem and a 5¼" disk drive, and a deal with Honeywell to set up Adam service centers around the country. Unfortunately, Coleco also announced a price hike that might raise the retail cost of the Adam to more than $700...*Koala*, maker of the *Touchpad*, unveiled a new product at CES. Their *Gibson Light Pen* is a very impressive graphics aid that will sell for about $250...*Amiga Corporation*, which up to now has produced joysticks, joyboards and game peripherals, announced that they will be introducing a new home computer in June. Code named *"Lorraine,"* it will be a 16-bit, 128K machine with its own operating system. Amiga president David Morse says *Lorraine* will be able to run *all* major 16-bit systems like MS-DOS...Speaking of operating systems, *the new Japanese OS standard, MSX*, was only represented by two machines, the Spectravideo 328 and the Daewoo. But everyone expects this system to show up more in the U.S. in a year or so.

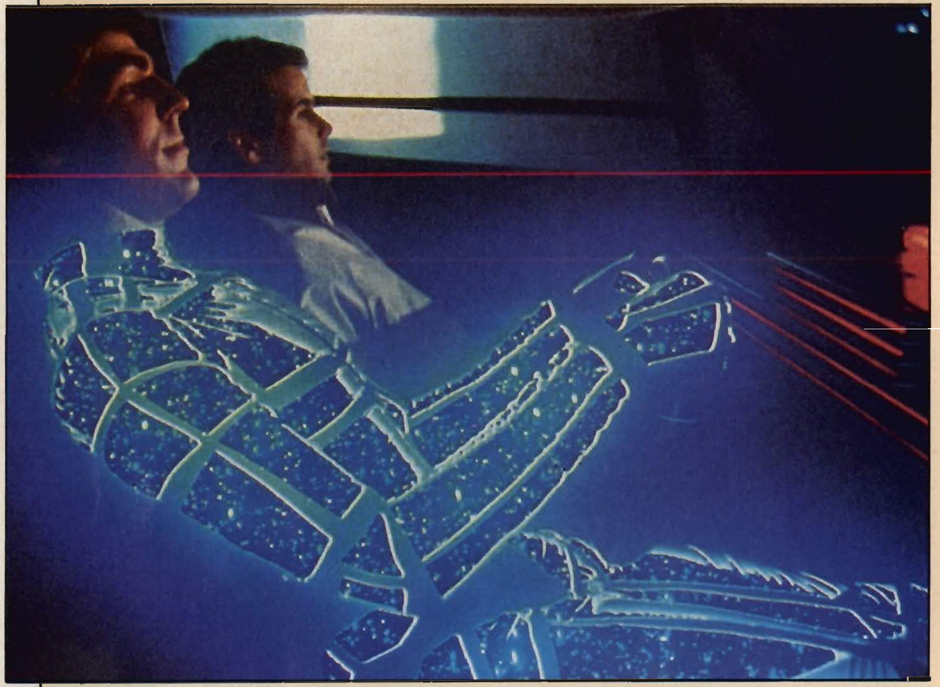
A new way to get games...an Adam add-on... and Commodore makes a splash.

SOFTWARE SPECIALS: Can you say "software"? Mr. Rogers now can. Educational TV's Fred Rogers and his neighborhood are moving into computers with a new CBS Software series based on his TV show. Nice to know some neighborhoods are on-line ...Beat *J.R.* at his own game! *Datasoft* is introducing a home computer game based on the *Dallas* series. The user is a detective searching for clues that lead to the location of a multimillion-dollar oil field. Will hackers soon be asking, "Who booted J.R.?"

Computerized Christmas cards, anyone? Now you can generate your own letterheads and greeting cards. Broaderbund's *Print Shop* software produces a dot matrix image that you can send your friends ...Leaping Lizards! *Reston Publishing's* new software series, Flyghts of Fancie, includes a rather scaly game called *Middle of the Road Lizard.* Your lizard walks a tightrope between the left (fast) lane and the right (slow) lane. Go too far left and you die of a heart attack; too far right, you expire from depression. It's enough to make you nervous.

How about some *high-tech jogging*? Exus's "foot craze" pad, teamed with *Jogger* and *Reflex* programs, takes the jogging fad one step farther. You can try to run a seven-minute mile, or play games by running on the pad and watching the Atari 2600 VCS. It's one way to turn your home into a private gym...Comical computing? *Adventure International*, the firm that features adventure games and is run by microcomputer-gaming pioneer *Scott Adams*, has licensed Marvel Comics characters *Spiderman*, *Captain America* and *The Hulk* for computer games. Adventure gaming may never be the same...

'AUTOMAN' GLOWS ON THE AIR



© 20TH CENTURY-FOX FILM CORP. ALL RIGHTS RESERVED

ABC-TV's "Automan" and Walter take high tech cues from *Tron* creator.

The latest in TV computer hijinks arrived last December with ABC's mid-season addition, *Automan*. This hour-long weekly series is about a video game character ("Automan," of course) who becomes a crimestopper for the Los Angeles Police Department. The title character, played by Chuck Wagner, is a program created by video game designer Walter Nebicher (Desi Arnaz, Jr.). Nebicher has quit game design to play cops and robbers as a computer expert for the L.A.P.D.

A computerized crusader who walks, talks, and—when dressed in everyday clothes—looks like a man, Automan *seems* ordinary. But one twist from his hexagonal sidekick, "Cursor," and Automan's capabilities far outreach those of mortals. When he's in action, Automan glows with an eerie holographic light.

If this reminds you of *Tron*, the Walt Disney special effects film dazzler of the summer of 1982, it's no wonder. Automan's *producer* Don Kushner was also the producer of *Tron*. Kushner says that the creators of *Automan* did a lot of experimenting with camera and computer animation techniques while shooting the pilot, trying to give the show a distinctive look.

Originally, Kushner notes, Cursor was completely computer-animated. "Now, Cursor appears on TV more or less as a point of light." In reality, Cursor is a hexagonal model that is "back-lit." The small model is lit from behind to make it appear to glow, then filmed against a blue screen. (A blue screen is used when the background of an object being shot is not used in the final print.)

Cursor seems to be moving—but that movement is all created by special effects. "A computer is programmed to plot the frame-by-frame movement of Cursor," Kushner says. What you see as Cursor on your TV is that glowing model, cut out and then placed on top of the original live-action film. The computer directs the precise placement of the model on different parts of the film.

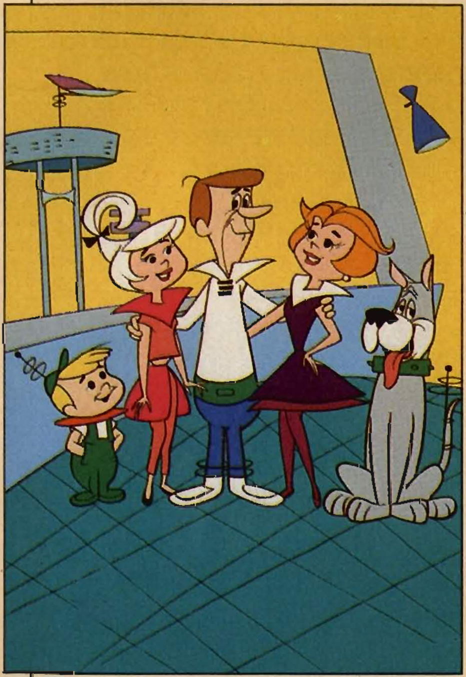
Some of the flashier effects on *Automan* are made with fairly simple techniques. Automan's shimmering suit, for instance, is a close-fitting costume designed with reflective material. A special light attached to the camera lens shines on the patterns to make Automan look as though he's glowing. The movement in those patterns is created later with the use of a computer-driven optical printer—which combines computer graphics and hand-drawn animation with live-action film.

"We've all seen movies where the computer is a good tool, but used in the wrong way," says *Automan*'s lead actor Chuck Wagner. "I believe *Automan* will create a friendlier picture of the computer."

Will Automan and Cursor scale the Nielsen-rating heights while improving our perceptions of computers? It remains to be seen. But the show has given TV its first high-tech crime-stopping duo since Batman and Robin raced the Batmobile through Gotham City. That must count for something.

—*Patricia Berry*

MOVIE NEWS: Remember George Jetson? Anyone who's ever seen the space age cartoon adventures of *The Jetsons* will be pleased to know that George, Jane and the whole crew are about to return. The laughable look into the high-tech future is being turned into a full-length, live-action movie for Paramount. The script is still being written, but we'll surely see push-button dinners, beds that fold up like toasters (and pop you out in the morning) and space scooters for after-school trips to Jupiter.....Be on the look-out for *Ice Pirates,* a new space adventure movie from MGM/UA that features hyperspace special effects created by a Cray supercomputer. The computer-synthesized images were put together by the Los Angeles-based Digital Productions special effects crew. The movie, by the way, is about an intergalactic battle over water (in the form of ice) and the quest for a lost planet. ...Never say Bond is bored of thwarting SPECTRE. Roger Moore returns as 007, the king of futuristic firearms and space-age escapes, in Ian Fleming's *From a View to Kill.* The MGM/UA feature begins filming in August '84.


© HANNA-BARBERA PRODUCTIONS, INC.

The space-age *Jetsons* cartoon will come to life in a 1985 feature film.

SOAP OPERA SPECIAL: Even TV soap operas are going on-line. Now you can get a daily update on your favorite soap by getting on the *Hollywood Hotline.* This *Hotline* is available through such telecommunication networks as CompuServe, Newsnet and CBS Extravision. In addition to soap data, this service also tells you what's happening at the movies, on TV and in the world of music. Interested? Write Hollywood Hotline, P.O. Box 1945, Burbank, CA 91507.

ROCK BITS: There's a robot among the *Cars!* Actually, it's a robot *fan.* Greg Hawkes, synthesizer player for the Boston-based group, is a robot fanatic. He collects them and even manages to bring them on tour with him. Greg's solo album *Niagara Falls* (Passport) features some fine synth playing, but, as far as we know, no robots....After all these years of trying to get synthesizers to create out-of-this-world sounds, English rock star Peter Godwin has reversed the process. "We've been able to make the synthesizer sound very acoustic," says Peter about his album, *Correspondence* (Polygram). "In many places," he adds, "a guitar may actually sound more like a synth than a synth will."

© ANN SUMMA/RETNA LTD.

Singer/actor/composer David Bowie will host PBS show on future trends.

THAT's SHOWBITS: Hot off the success of his album, *Let's Dance,* rock star David Bowie is investigating high-tech trends. He'll be bringing his Ziggy Stardust Wanderlust along this fall as he hosts a six-part Public Broadcasting Service TV series *Dimensions.* ...The tune's familiar: the theme to NBC-TV's *Knight Rider.* K.I.T.T. the wonder car saves Santa in this heavily computer-synthesized rap record, *A Knight Rider Christmas* (MCA). It's a Yuletide adventure that will hit home all year long. e

TEI'S COMPUTER WEATHER SERVICE

PHOTO © BOB LYNN

Weather watch: Tei Gordon's computer info saves companies millions.

At 7:00 every Monday morning you'll find 13-year-old Tei Gordon busy at work on an Osborne computer, collecting information that will influence decisions at major companies like General Mills and J.C. Penney.

Tei, who lives in Corvallis, Oregon, uses his father's computer and modem to get climate data from the National Oceanic and Atmospheric Administration (NOAA) in Washington, D.C. Tei then has the computer translate this information into a readable form. Finally, he prints out the data, photocopies it, and mails the results to over 50 companies across the country. This climate information helps the companies save money—in some cases, even millions of dollars—by helping them to regulate fuel consumption in their buildings.

"The beauty of his service," says William Haun, president for engineering at General Mills in Minneapolis, "is its convenience. It's tremendously useful in helping us control energy consumption in our buildings. [His information] is saving us about $13 million each year."

The idea for setting up a weather service came from a friend of Tei's Dad. "I really liked the idea," recalls Tei, "so I consulted someone who could help me write a program for the Osborne at my Dad's office. The program was really complicated. It had to sort through NOAA's data, and record the important stuff, and it took quite a few hours to figure out."

Tei started his service about a year and a half ago. He charges each company $47 a year for the information. For the most part, Tei does the work single-handedly: "My Dad helps me plan business strategies. I'm not such a great typist, so sometimes I get help with that, too. But the rest, I pretty much do by myself."

Tei earned more than 2,000 dollars during the first year that he ran his weather service. He expects to make twice as much this year. "Making the money is one of the best parts," he says. "I mostly save it, but I do take some out for records and stuff. Also, I'm planning to buy an Apple IIe, because I'm really into games. My friends and I have over 100 games between us."

Many of the businesses that Tei works for have no idea how old he is. When a reporter called Mr. Haun at General Mills and told him, he replied, "A 13-year-old kid? Well, that's remarkable."

Reactions like that please Tei, who says he really likes his job. "It's exciting," he says. "It makes me feel pretty great that these companies use my service. It's a really neat feeling."

Big Winners

Two young game players became accomplished game designers recently when they won major contests.

On January 14th, Mark Reid was named the winner of Atari's annual Star Award competiton. His prize is a check for $25,000.

There are 35 screens in 27-year-old Mark's prize-winning game, *GetAway*. The player controls the action of a getaway car that's being chased around town.

How did Mark get started writing games? "Well, it's really something I do just for fun. I like thinking up ideas—most of them don't go very far. But programming games is just something I really enjoy."

When John Cunningham, 18, of Orinda, California, won Verbatim Corporation's EdGame Challenge, his prize was not quite as impressive as Mark Reid's. John won a $500 gift certificate to a computer store. But he was pretty excited: "Actually, excited is an understatement," John remembers. "You should have heard me shout! It was a really big surprise."

John's game, *Dr. Oz's Cavern*, is designed to make learning mathematics fun. Each time a player answers a math problem correctly, a little man moves into another room in the cavern.

What's next for John? "Well, first I have to go to school, after that I'm thinking of being a game designer." ⊏

Round Out Your Child's Summer

There's nothing like the fun, excitement and learning of CompuCamp

CompuCamp will round out your child's education too. Computers are the future, and you can help your child be ready. But hurry! Camp dates are filling up fast. • Experienced professional staff who really relate to kids • One staff member per five campers • Plenty of computer time available each day • Special courses in BASIC, Logo, Pascal, Word Processing and Robotics • Instruction on Apple™ with introduction to other microcomputers • No computer knowledge necessary. Instruction at all levels • Self-paced proven curriculum • Variety of recreational and traditional camp activities.

Reserve a place for your child at CompuCamp—and in the future.

Call toll-free: (800) 328-5727 EXT. 70A
FOR FREE BROCHURE AND SCHEDULES

Computer Camps for boys and girls 9-17. 1 and 2 week sessions. Campers live at camp.

CompuCamp™

Corporate Offices
5810 W. 78th Street
Minneapolis, MN 55435
Camps in California, Colorado, Maryland, Minnesota, Nebraska, Oregon, Pennsylvania, Texas, Wisconsin and Missouri

MOVING?

Be sure that Enter moves with you.
Please attach a copy of the mailing label
from this issue of Enter and mail it to us at:

ENTER
ONE DISK DRIVE
P.O. BOX 2686
BOULDER, COLORADO 80321

Please be sure that Enter gets to me at my new house.
New Address:

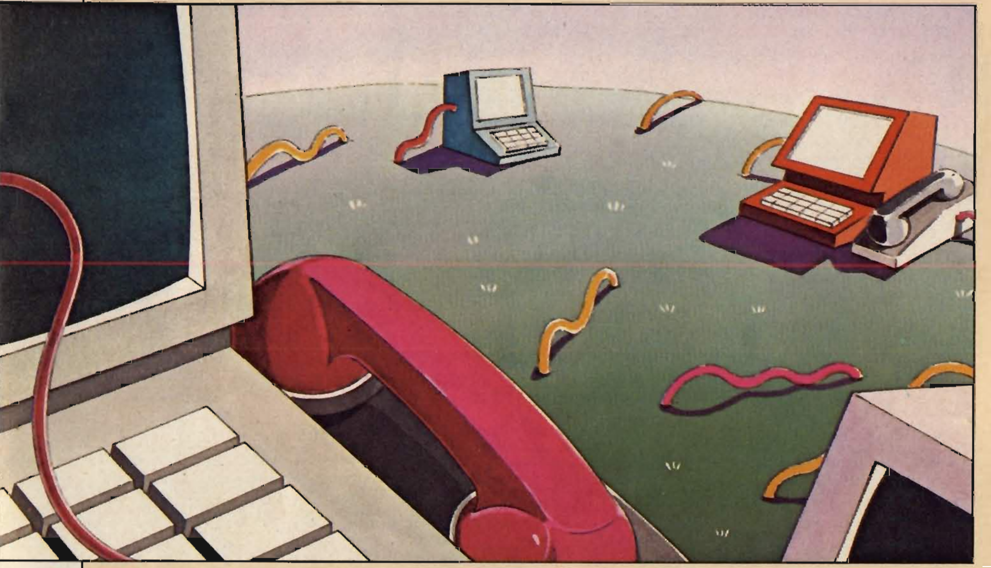
Name

Street Apt.

City State Zip

Allow 6 weeks for processing, thank you.

CONNECTIONS


© MIN JAE HONG

“Connections” will share news, contests and resources with you each month. If you know of any events or items we should list, write to: "Connections," ENTER, 1 Lincoln Plaza, New York, NY 10023. Please send all notices in at least four months before the scheduled event.

CHEAP SOFTWARE

You *won't* get a notebook overflowing with diskettes when you buy one of the "Free Software Series" books. You *will* get an extensive list of places that offer free and cheap software.

The series is divided into five books—one each for Apple, Atari, Commodore, IBM and Texas Instruments computers. Each book costs $8.95 and includes information on educational, game, home management and business software. Authors David and Dorothy Heller claim that "No matter where you live, we'll show you how to access many valuable resources."

There's a lot of useful information in each book. If you're looking for user groups, electronic bulletin boards, or how to get free software through a modem, the books cover these areas. The "Free Software Series" should be available in your local bookstore or computer store or write to: Enrich/Ohaus, 2325 Paragon Drive, San Jose, CA 95131.

BUYERS' GUIDE

You're almost ready to buy a home computer—but you want some more information. You can get some help from "How to Buy a Home Computer."

This illustrated 50-page guide answers important questions about home computers. For instance: How do computers compare in resolution, interfaces and availability of repair?

The booklet also includes a budget workpage, a glossary, an evaluation checklist, and more. The one thing you won't get is price information. But the booklet is helpful, easy to understand, and yours for the cost of postage.

For a copy, send a self-addressed envelope (6" x 9" or larger) with 54¢ worth of postage to: "How to Buy a Home Computer," Electronic Industries Association, P.O. Box 19100, Washington D.C. 20036.

PROGRAM EXCHANGE

Looking for things to do with your computer? You can get help from the Young People's LOGO Association. The YPLA is an international user's group mainly intended for people under 18.

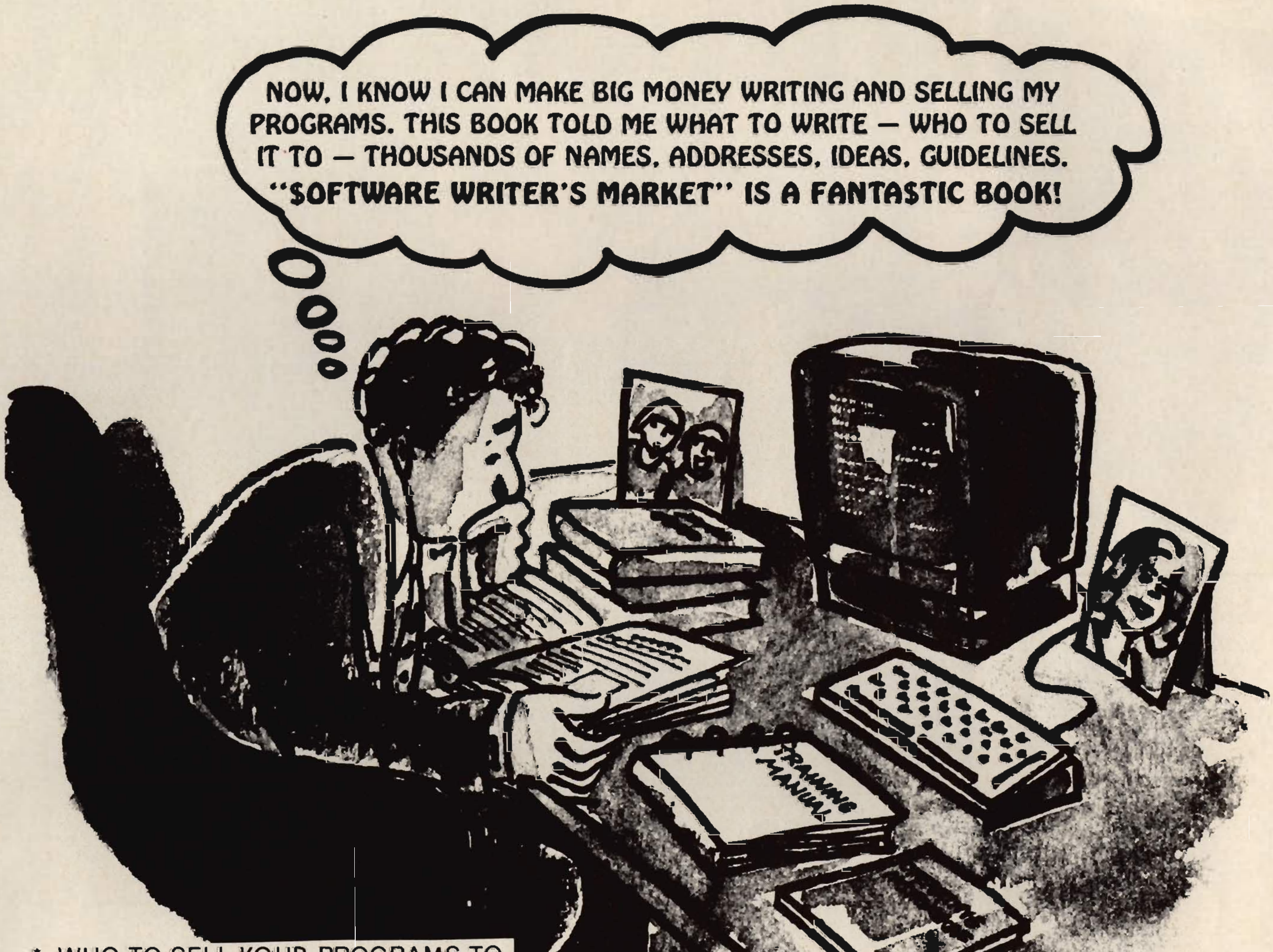
The YPLA runs a software exchange. If you mail them a working program (disk or cassette), you can select any tape or disk in their catalogue in exchange. If you want to *buy* a tape or disk, the cost is $10 for postage and handling. The YPLA catalogue offers programs in LOGO, BASIC, and other languages, for the following systems: Apple II micros, all Atari computers, Commodore VIC-20 and 64, Radio Shack Color Computer, IBM PC, Timex/Sinclair ZX81, and the TI 99/4A.

Membership in the YPLA is $9 for anyone under 18; adults must pay $15 a year. For information, write to YPLA, 1208 Hillsdale Drive, Richardson, TX 75801.

—Compiled by Carol Saul

programmer s

READ THIS...


NOW, I KNOW I CAN MAKE BIG MONEY WRITING AND SELLING MY PROGRAMS. THIS BOOK TOLD ME WHAT TO WRITE — WHO TO SELL IT TO — THOUSANDS OF NAMES, ADDRESSES, IDEAS, GUIDELINES. "$OFTWARE WRITER'S MARKET" IS A FANTA$TIC BOOK!
TRAINING MANUAL

- WHO TO SELL YOUR PROGRAMS TO
- THOUSANDS OF COMPANY NAMES AND ADDRESSES, WITH DETAILED LISTINGS SHOWING:
  - (1) WHAT PROGRAMS PUBLISHERS ARE LOOKING FOR
  - (2) HOW THEY WANT YOU TO SUBMIT YOUR PROGRAM
  - (3) HOW MUCH THEY PAY — AND WHEN!
- 100 CATEGORIES — FROM "ACCOUNTS RECEIVABLE" TO "GAMES" TO "VIDEO CONTROL" PROGRAMS
- HOW TO WRITE CLEAR DOCUMENTATION
- DEBUGGING TECHNIQUES

Orders Shipped Immediately!

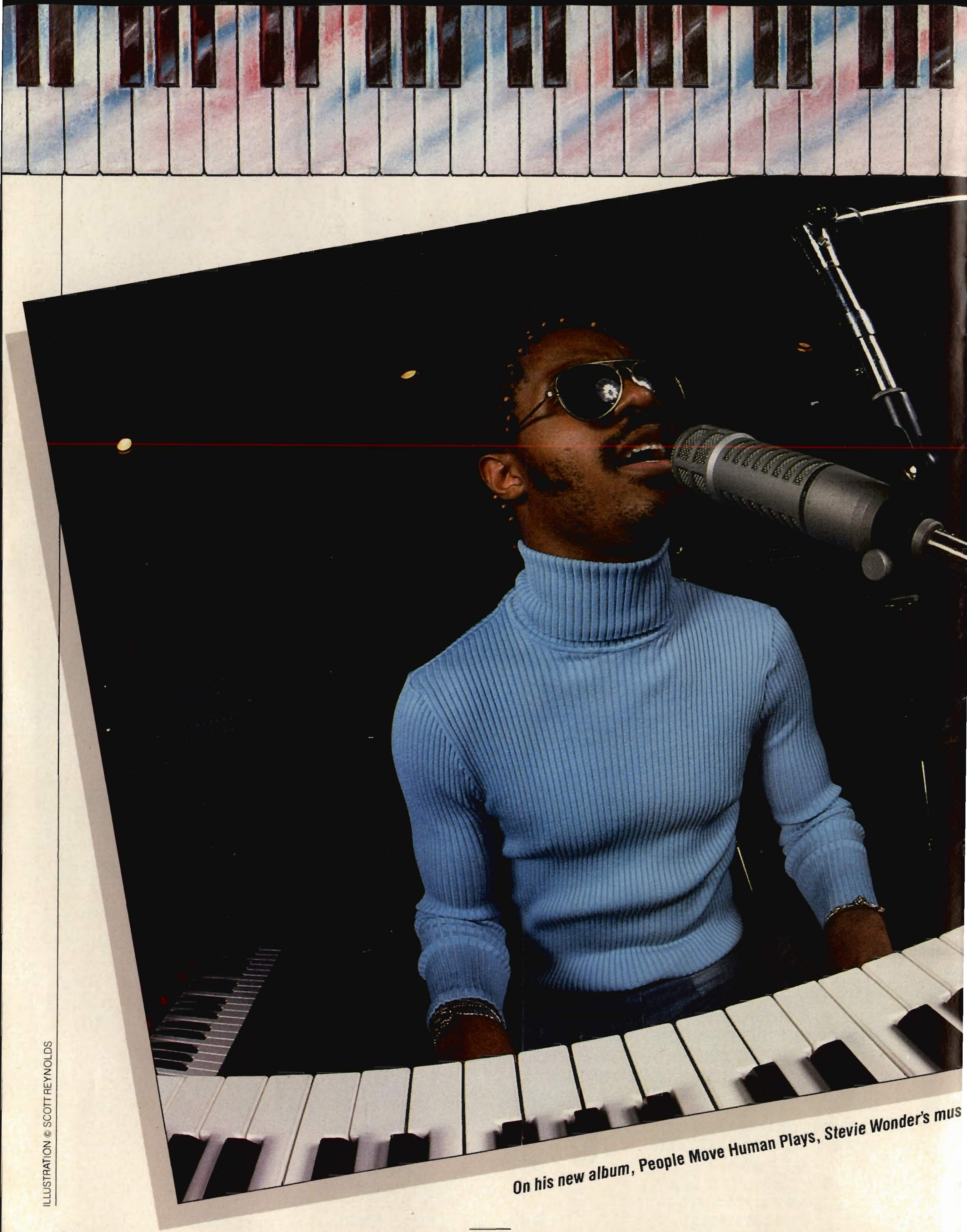
Enclose check or money order for $19.95 (No C.O.D.'s) to:

IPF Publications
146 Country Club Lane
Pomona, NY 10970
(914) 354-5585

Name . . . .

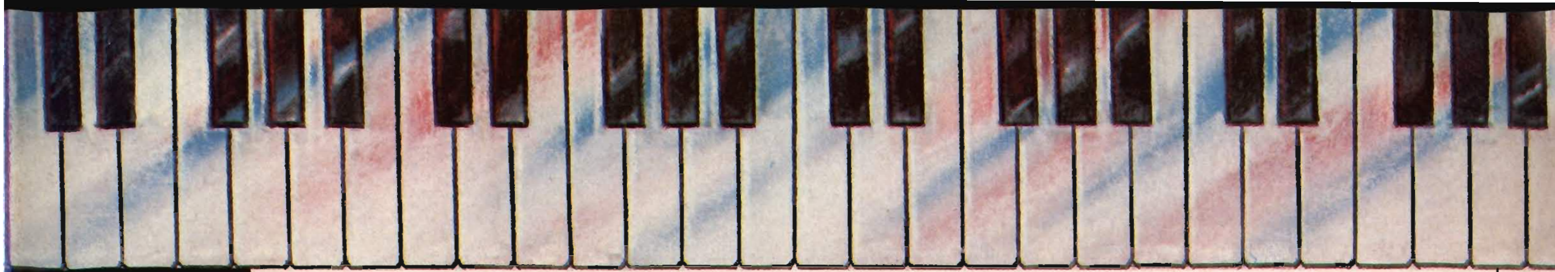
Address . . . .

City . . . . **State** . . . . **Zip** . . . .



On his new album, *People Move Human Plays*, Stevie Wonder's mus

ILLUSTRATION © SCOTT REYNOLDS



© AL SATTERWHITE/CAMERA 5

c overflows with hot new high-tech sounds.

STEVIE WONDER

COMPUTERS MAKE THE MUSIC IN HIS LIFE

BY FREFF

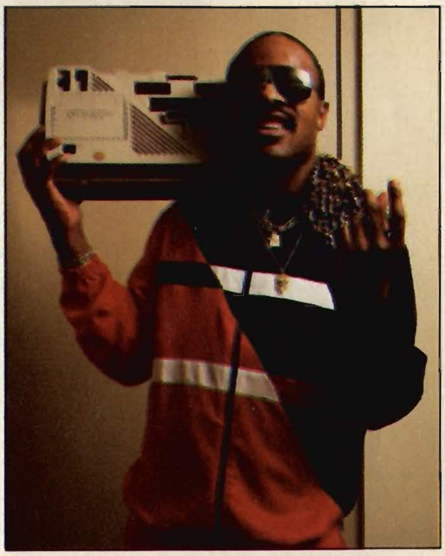
For the sixth night in a row, New York's Radio City Music Hall has sold out. The huge crowd is waiting eagerly for the moment when superstar Stevie Wonder and his band, Wonderlove, hit the stage.

The audience knows tonight's concert will be extra-special. Alongside old favorites like "My Cherie Amour," "Superstition" and "Ebony and Ivory," Stevie will be premiering songs from his brand-new album, *People Move Human Plays*. No one knows what to expect. Stevie has always been an innovator, both in musical style and musical technologies. He's used computers and electronics before, so tonight *anything* can happen.

The house lights dim. And then comes proof that computers have become a vital part of his music in the last three years: Stevie uses a computerized PPG Wave 2 sequencer to open the show.

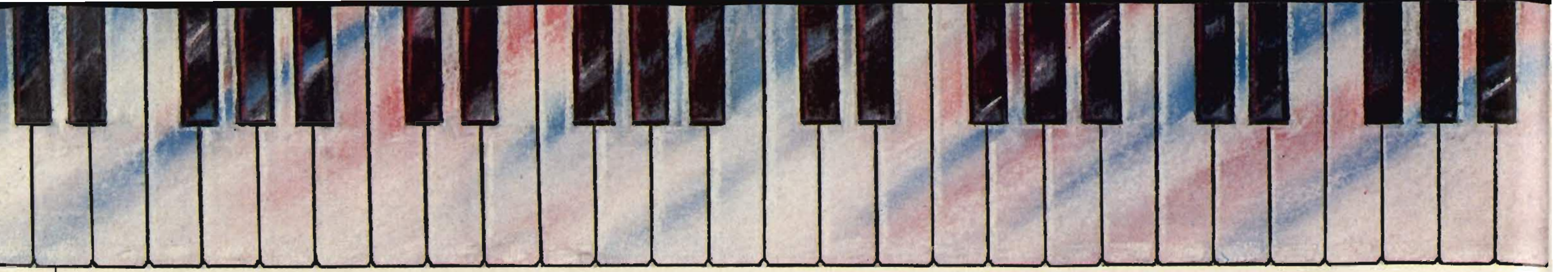
One of the band members comes on stage. He presses a button on a box atop Stevie's keyboard rack. Instantly, Radio City is jumping to the computer-controlled drum-machine-and-synthesizer funk of one of Stevie's new songs, "It's Growing." The rest of the band dance on, one by one, pick up their instruments, and settle into the music's groove. Just when things seem to have reached a peak, Stevie joins in from backstage, singing through a wireless microphone.

Stevie is blind, so his brother Cal-



© STAN FELLERMAN

Stevie holding the Versabraille, a computer that "reads" books.



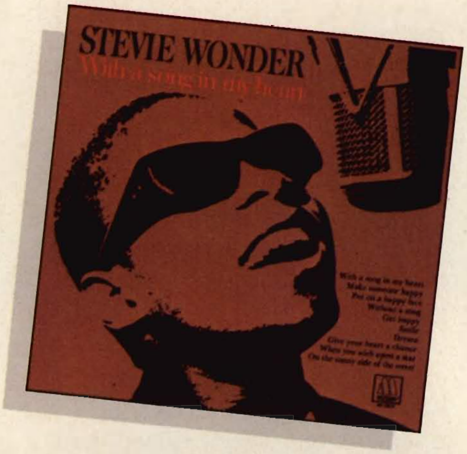
vin carefully guides him from the wings to the front of the stage. He's still singing, but you can barely hear him over the applause. And now, the concert—which turns out to be filled with electronic and computerized sounds—gets underway.

A SENSATION AT 13

Stevie Wonder has been performing onstage and on records for 20 years. He became a star at the age of 13, when "Little Stevie Wonder" (as his record label called him) had his first hit single, "Fingertips Part 2." Many more hit singles followed, as well as gold and platinum albums like *Innervisions, Songs in the Key of Life,* and *Hotter than July.* Today, Stevie Wonder has become one of the most influential recording artists in the world. And computers, it turns out, have become a very important part of his music—*and* his life.

Stevie's first computerized instrument was a custom-built digital synthesizer called a Melodeon, which he played on his 1979 album, *The Secret Life Of Plants*. It was used to create a variety of unusual and naturalistic sound effects, including strange jungle and bird noises. The Melodeon, built before the current explosion of digital synths, was comparatively unsophisticated. But it was the beginning of Stevie's fascination with electronics. Later, as instruments like the Fairlight, the Emulator, and the German-made PPG Wave 2.2 became available, Stevie bought them and eagerly applied them to his music.

THE
JAZZ SOUL
OF LITTLE STEVIE
"LITTLE STEVIE WONDER"


STEVIE WONDER
With a song in my heart

TRIBUTE To UNCLE RAY
LITTLE STEVIE WONDER

RECORD COVERS COURTESY MOTOWN RECORDS

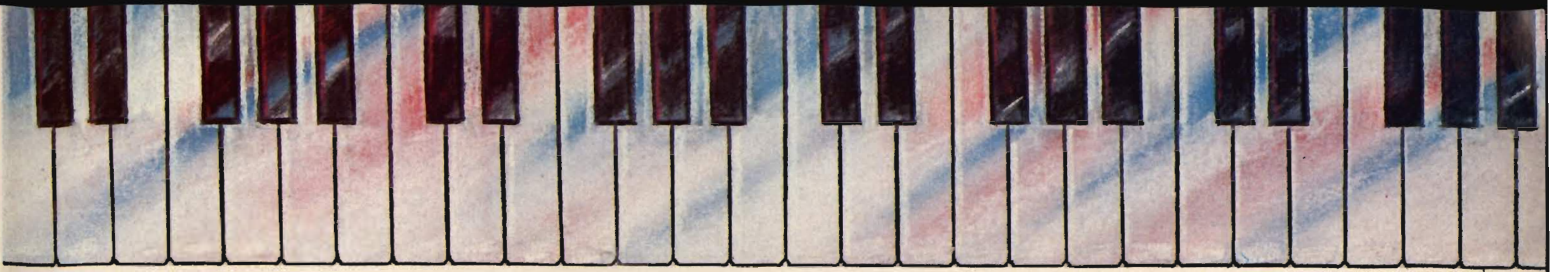
In fact, keyboards like the PPG and digital drum machines like the LinnDrum played crucial roles in the composing of Stevie's new album. Their unique sonic textures and programmability are what inspired the musical structure of songs like "It's Growing" and "Broken Glass." Without these new instruments and the special sounds they can create, those tunes would never have been written. And without the clarity and perfection of digital recording, the sheer beauty of Stevie's new sounds would have been impossible to capture on a disc.

"Basically," Stevie explains, "I see all of these different instruments as being like different paints a painter might use to create a picture, an expression. Only what I'm making is a sound expression, a painting that the ear can see."

Onstage, the computer instruments Stevie plays have been partially preset. He can control them by memorizing how many times he must press various switches to get the sounds of his choice. That works fine for a performance. But to use computers creatively while composing or recording, Stevie has to rely on the aid of assistants. These people help out by telling him what's on the computer screens and readouts, typing in commands, keeping track of floppy disks, and so forth.

HOW COMPUTERS ARE CHANGING HIS LIFE

Having to depend on others this way is a little frustrating for Stevie. But thanks to new computer de-



velopments, it's a frustration he won't be having for long.

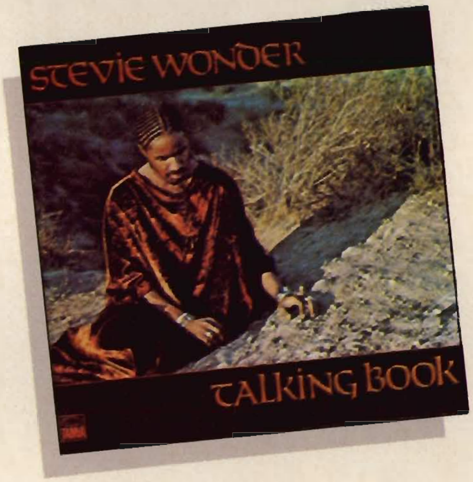
"I've got some software and hardware folks working right now on a very high-memory synthesizer/computer interface to hook up my different systems," he explains. "Then I'll be able to do all this stuff completely by myself. I'll have the freedom and flexibility to do what I like, instead of having to depend on an operator all the time."

The other "systems" Stevie is talking about are two of the many new computer products designed specifically to aid the blind. One is the Kurzweil Reading Machine (KRM). The other is the Versabraille.

The KRM is really two machines in one: a computer that can scan the words on a printed page and interpret them, and a speech synthesizer that can speak those words out loud, at speeds of up to 250 words a minute. Stevie was one of the first private owners of a KRM. He uses it to read everything from popular novels like Frank Herbert's *Dune* books—he has loved science fiction since he was a teenager—to manuals for his synthesizers.

The KRM also helps Stevie work with his computers. It can read what's on another computer's screen. This allows Stevie to teach himself. When, for example, he got a portable Osborne computer to use on the road, Stevie was able to learn all about it himself by hooking the KRM up to the Osborne. The Osborne company had put their instruction manual on a floppy disk for Stevie, so all he had to do was put the disk in the Osborne and turn it, and the KRM, on. Then he listened as the KRM read everything to him straight off the disk! *(For more on the KRM, see the following story, "Talking Book.")*

Stevie Wonder
MUSIC OF MY MIND

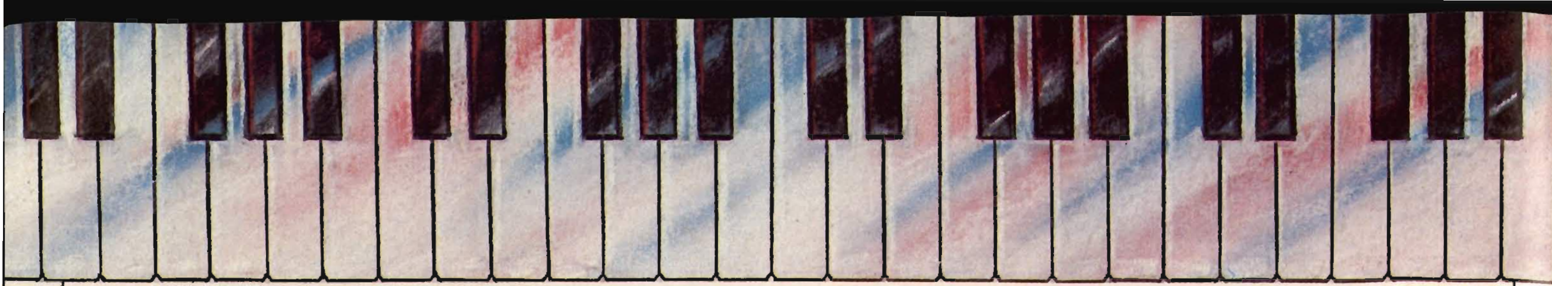


STEVIE WONDER INNERVISIONS

Stevie's other system, the Versabraille, is a lap-sized computer designed specifically to use braille, a language for the blind that consists of patterns of raised dots representing different letters. Nearly all blind people know braille, but until computers came along, braille information wasn't very portable. A braille book could weight as much as ten pounds. But the Versabraille can store tens of thousands of braille characters on a lightweight data cassette. It can then use this information in a variety of ways. The data can be sent via modem to another Versabraille, for example. Or the Versabraille can be connected to a KRM, so that the braille characters will be instantly translated into speech. The information can even be read back to the user by the Versabraille itself, one line at a time, using a special plastic readout strip on the machine's top. This strip has many tiny holes, with small plastic pinpoints that extend and retract to create different braille characters. Someone experienced with braille can very easily read these by simply passing his or her fingertips along the strip.

Right now, Stevie uses his Versabraille on and off the road as a kind of portable electronic notebook. It helps him do business, take notes, write letters and song lyrics, and keep track of addresses. But Stevie is building a complete integrated system, and soon the Versabraille will do a lot more.

When the Versabraille, KRM, and his instruments are all hooked to-



gether, Stevie's musical tools will literally be able to talk to him—either in braille with the Versabraille's readout strip, or with the KRM's synthetic voice. He will be able to talk back to them and control what they do by writing in braille.

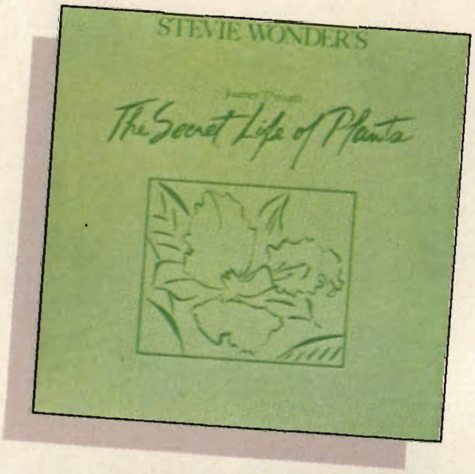
"Up until now, I've pretty much had to write music the way people have always written music, all the way from Stravinsky to Count Basie. They basically heard it in their heads, complete, and had to write it down on paper," Stevie notes. "But this new system will give me a whole different kind of flexibility in composing and arranging things the way I want to, so I can actually hear them right away, and see what I like and don't like about a tune."

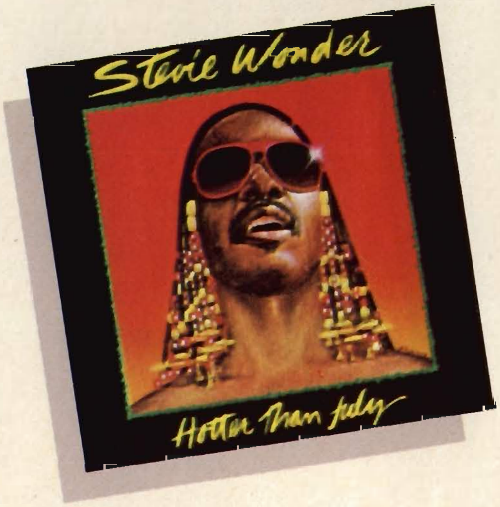
STEVIE'S HIGH-TECH EDUCATION

To Stevie, all this high technology is more than just liberating. It's natural.

"I've been learning more and more about computers, about programming. I've been trying to learn all I can. Even back in high school, I always loved the science classes and stuff...because a lot of what is reality for people now was only a dream then, only science fiction. But these advances are a part of life." That doesn't mean discarding what's good from the past. On stage, Stevie plays piano as well as synthesizer, and harmonica as well as drum machine.

Songs In The Key of Life
Stevie Wonder





"I try to keep all my instruments around me, because even though we are in a constant state of evolution, a lot of different concepts come around again in a different kind of way," he says. "Today's music is very reminiscent of the music being made in the early '60's, when I began recording as a kid. Listen to Billy Joel's 'Uptown Girl'—that's a lot like the Four Seasons. And Culture Club is the early Motown sound, updated and modernized. It's been 20 years. Most of the kids listening today weren't even born back then. But the music's good, and its [style] is coming back, with a slightly different approach."

Computers, without any question, are part of that difference. On the stage of Radio City Music Hall, as Stevie and Wonderlove swing through a medley of his best-known songs, at least five different computer-controlled instruments are being used to play tunes that were written before commercial synthesizers even existed (let alone computerized ones!).

"I think the real key is that even with this technology out there, you have to use that computer inside your own self—your mind," says Stevie.

"You've got to interface everything you learn from all the advances—computers are just one way of doing things more expediently, with greater accuracy," Stevie says. Most important, he adds, "You've got to connect your mind's computer to all that, and put it in your living memory bank." E

FREFF is a regular contributor to ENTER. A writer, musician and computer enthusiast, he wrote our story on Thomas Dolby, "Computer Rock's First Star" (Dec/Jan '84).

Tell your parents you're studying.

Introducing Wizware.™ Now you can have a blast on your computer and your parents won't mind.

Tell them you're catching up on your spelling or geography. You will be.

But here's what you'll *really* be doing! Chasing the Fuzzbomb around the country. Matching your wits against Max the Robot. Searching for secret messages deep beneath the sea. Or writing your own mystery.

Agent U.S.A.™
The Fuzzbomb is turning the U.S. into a nation of Fuzzbodies. As the top agent for an elite intelligence organization, only you can stop him. You crisscross the country by train in hot pursuit. But be careful! One wrong move and you'll become just another Fuzzbody. Geography was never this much fun!

Spelldiver.™
Deep beneath the sea lie giant words covered by a strange seaweed called lettermoss. You face sharp-toothed sharks and pesky flipper-nippers as you dive to the bottom and remove the lettermoss. The quicker you guess the words, the quicker you're safe.

Bannercatch.™
In a field bigger than the biggest football field, you and a friend take on chief robot Max and his robot raiders. Steal their flag before they steal yours and you win. But your strategy better be good!

Story Tree.™
Amaze your friends with a twist-a-plot story that you can write yourself. See how many twists and turns you can put into it.

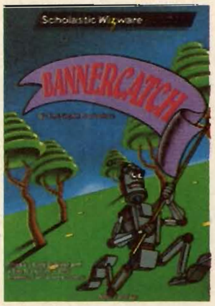
So make your parents happy. Tell them you're studying. Just don't tell them how much fun you're having.

Look for Scholastic Wizware at your local computer store. *Or contact Scholastic Inc., 730 Broadway, New York, NY 10003, 212-505-3000.*

Scholastic™ Wizware

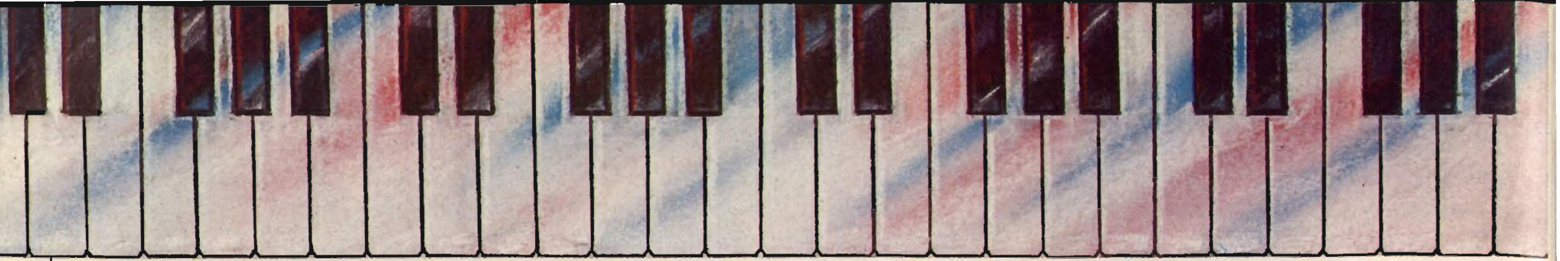
Scholastic Wizware
AGENT USA

Scholastic Wizware
SPELL DIVER



Scholastic Wizware
StoryTree

Agent U.S.A., Spelldiver, Bannercatch designed and developed by Tom Snyder Productions, Inc. Story Tree designed and developed by George Brackett. • Agent U.S.A., Spelldiver, Bannercatch available for Atari 800/1200/XL. Commodore, Apple, IBM versions available soon. • Story Tree available for Apple.



TALKING BOOK

RAY KURZWEIL'S READING MACHINE OPENS BOOKS TO THE BLIND

Ray Kurzweil may not be a great musician, but Stevie Wonder doesn't mind. Stevie thinks Ray makes some of the most beautiful sounds around.

Ray doesn't play an instrument or sing. In fact, the sounds he helps create have nothing to do with music. Ray's sounds come from the Kurzweil Reading Machine (KRM), a computer that scans any printed text and then reads it aloud. For Stevie Wonder and other blind people, that's just about the most wonderful sound in the world.

AN OPEN BOOK

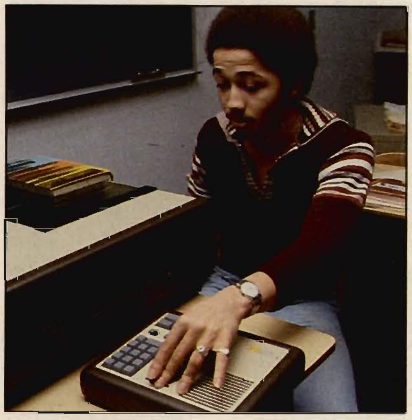
With its ability to read almost any typeface—even ones as small as a phone book's or as fuzzy as a newspaper's—the KRM opens up a whole new world to the blind. It's a world of magazines, libraries, bookstores and newspapers that most of us take for granted. Before the KRM, Stevie had to depend on braille and recorded tapes to get his reading material. Now he can read any book he chooses.

When Stevie learned about the KRM, he traveled to Ray's Massachusetts factory to check it out for himself.

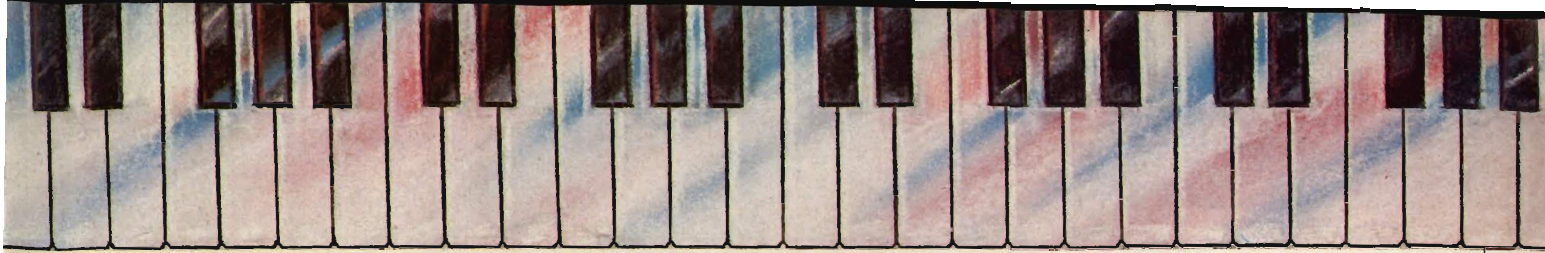
Ray, 34, recalls the visit with a smile: "He was very excited about it and wanted one right away, so we actually turned the factory upside down and produced a unit that day. We showed him how to hook it up himself. He left with it practically under his arm. I understand he took it straight to his hotel room, set it up and read all night."

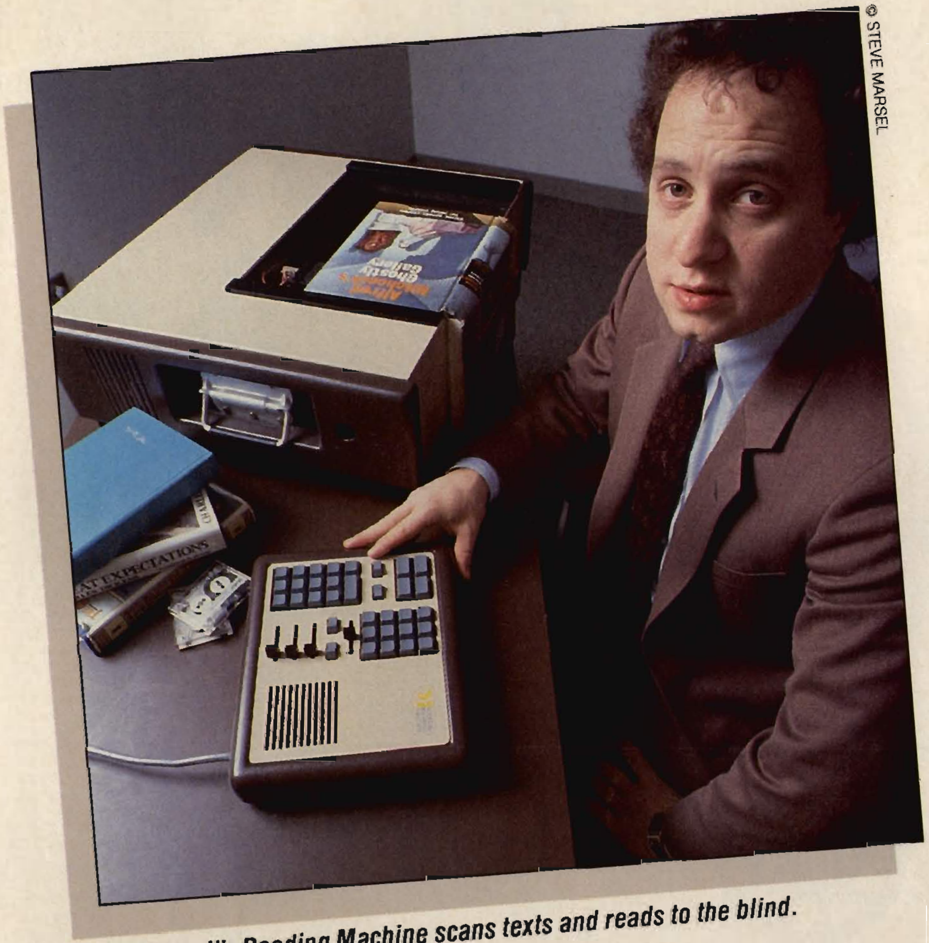
Stevie did that and a lot more. He had special cases built so he could carry the KRM with him when he traveled. He carefully studied the machine's operation and suggested improvements. Some of Stevie's ideas have become standard features of the KRM. For example, Stevie suggested adding a feature that would allow the reader to leave up to ten different "bookmarks" on a page of text. It's now a part of the KRM. This feature lets those using the machine skip around and then find their way back to the chapter and page they want.

Stevie has used the KRM to teach himself how to use other computers. And he is having the machine interfaced with his digital musical instruments so he can program those instruments without the help of assistants.


© MARTHA STEWART

Using KRM is easy: by pressing the keys you control what it reads.





© STEVE MARSEL

Ray Kurzweil's Reading Machine scans texts and reads to the blind.

RAY KURZWEIL, COMPUTER PRODIGY

Just as Stevie Wonder has been making astounding music since he was a young boy, Ray Kurzweil has been creating computer breakthroughs since his teens.

When he was 13 years old, Ray designed an award-winning electronic memory system that could store and sort 4,000 facts. And when he was 16, Ray built a computer that could analyze classical music and produce original melodies.

These feats eventually led him to the Massachusetts Institute of Technology, where he began studying Artificial Intelligence (AI). Research in AI is directed towards creating machines that can "think" and learn to improve their own performance. It was while conducting such research that Ray got the ideas that made the KRM possible.

"Getting a machine to recognize letters and words on a page is a classic problem in AI research," says Ray. "I had a technique I thought would work, so I decided to develop it. A reading machine for the blind seemed the most promising application to begin with."

Ray was 27 when he built the first KRM. It was the most advanced machine of its type then—seven years ago—and is still the most advanced today. But Ray hasn't stopped making breakthroughs. In the past few years, he's created a version of the KRM that can read books and store them as data at a rate as high as 1,000 words a minute. And he's invented a computer keyboard that's so sophisticated it can perfectly synthesize the sound of a grand piano.

SOUND ALL AROUND

Ray's new keyboard, the Kurzweil 250, is already on its way to joining Stevie Wonder's musical instrument collection.

Someday, perhaps, Stevie will be able to use that keyboard and his vast musical talent to overcome the one problem that stands between the blind and the use of a machine like the KRM—cost. At $30,000 each, only a relatively few KRMs are available.

If Stevie has his way, this problem won't last long. "My wish," he says, "is that all of this equipment could be available to the average blind person. I would love to do a benefit to raise money for that." —*Freff*

ANNOUNCING A PROUD ADDITION TO YOUR FAMILY.

The next addition to your family could be the bright little newcomer in the growing family of IBM® personal computers.

Name: PC*jr.* Weight: 12 pounds. Heritage: more than 30 years of computer experience.

"Junior" is a powerful tool for modern times. Yet it's simple enough for a child to enjoy.

BRINGING HOME BABY

It's a big day when PC*jr* comes home. The surprises begin the moment you open the carton.

Surprise #1 is the IBM "Freeboard"— a keyboard that doesn't need a connecting cord. The Freeboard frees you to move around and relax.

Then there's the Keyboard Adventure— an instructional exercise for first-time users. It's built into the computer and explained step-by-step in the Guide to Operations. It will help anyone begin learning as soon as PC*jr* is hooked up to a TV set.

In systems equipped with a diskette drive, there's a program that lets you explore computer fundamentals at your own pace, with PC*jr* as your teacher.

And to get you off and running from the very first day, a sample diskette with eleven useful mini-programs (ranging from a spreadsheet for monthly expenses to a word game and a recipe file) is also included.

But there are still more surprises.

FAMILY COMPUTING MADE EASY

Many IBM software programs written for other IBM personal computers will run on PC*jr.* And inexpensive new ones written especially for PC*jr* are being released.

An easy-to-use diskette word processing program, for example, uses pictures as well as words to guide you along. A comprehensive IBM home budget program makes keeping track of money easier. There's also a selection of educational programs for children at home and at school.

And when the work is finished (or perhaps before), the fun can begin. Just slip in a game cartridge and stand back.

GROWING UP WITH JUNIOR

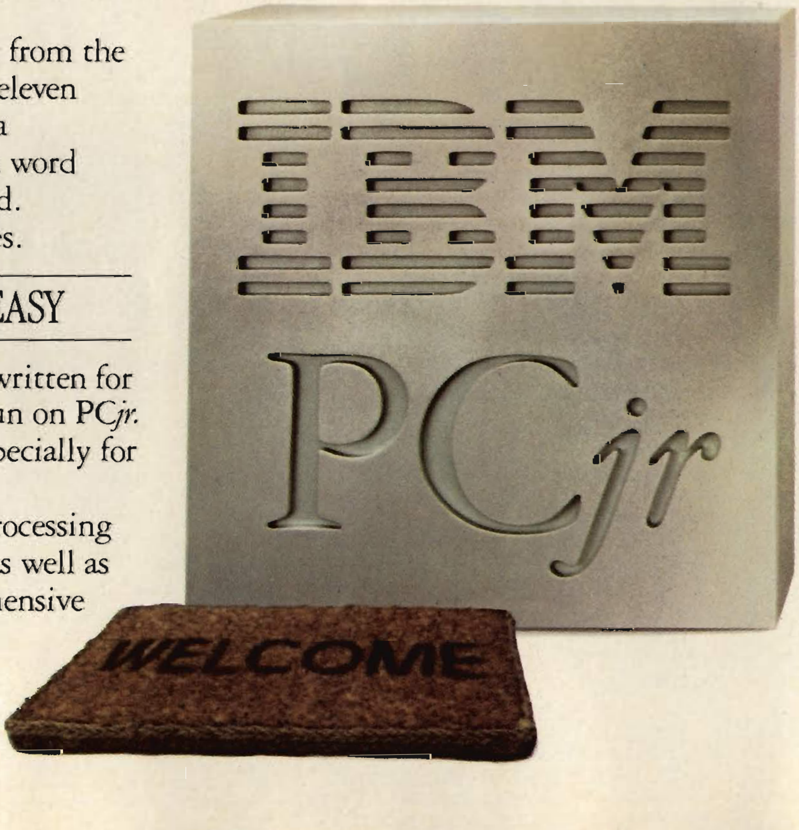
Add a printer. A diskette drive. An internal modem for telecommunications. Increase user memory from 64KB to 128KB. With these and other add-it-yourself options, even the lowest-priced PC*jr* can grow up *real* fast.

PC*jr* is a powerful tool for home, school or college. With its optional carrying case, it's a powerful tool anywhere you care to take it.

SEE JUNIOR RUN

Junior's starting model includes a 64KB cassette/cartridge unit and Freeboard for about $700. A 128KB model with diskette drive is about $1300. (Prices apply at IBM Product Centers. Prices may vary at other stores.)

Your local authorized IBM PC*jr* dealer proudly invites you to see this bright little addition to the family. For the store nearest you, just call 1-800-IBM-PCJR. In Alaska and Hawaii, 1-800-447-0890.



The Chaplin character licensed by Bubbles, Inc., S.A.

HOT

SHOULD COPYING SOFTWARE BE A CRIME?

BY DOUG GARR

The illegal copying of software is not talked about very much in public. Yet anyone who makes even a single copy of their computer software to avoid paying for it in a store is, technically, a "pirate" breaking the law. But many people think copying a disk or two for friends is all right. The big-time "pirates"—who duplicate thousands of disks to sell at a profit—should be punished, they insist, but others should be left alone. After all, they say, copying is a way of life. People photocopy pages from books, videotape programs off TVs, and record cassette copies of favorite albums. Why, they ask, should people who copy a software disk be called "pirates"?

There are other people who believe that any copying of software is illegal and causes a lot of harm. Computer industry people—including many young programmers —point to the financial loss caused by illegal copying. "It is estimated by various industry sources that 20 to 60 percent of all commercial program packages in use are illegal copies," says Donn Parker, computer security expert with SRI

COPIES

GORGON II
maxell
BASF
maxell

© STAN FELLERMAN

HOT COPIES

'Software prices are ridiculous... Why not make copies?"

International. That means millions of dollars a year may be lost to illegal copying of software. This money, say computer people, is "stolen" not just from software authors, but from everyone involved —from computer store owners to purchasers of legitimate disks.

ENTER has talked with people on both sides of the software copying issue. Is making unauthorized copies of software a minor problem or a serious crime? Read the following stories and decide for yourself.

PRO:

It's Okay To Copy

"I started working on my computer software collection a few years ago," says one 16-year-old. "It's easy. Basically we just swap, or you give someone $5 to make a copy. I'm not going to deny it. It's done a lot. I specialize in the Apple, another friend copies Atari programs, and there's one other guy who does Commodore."

Almost every game, graphic, business and other software disk on the market is protected against copying. Software companies spend millions of dollars each year designing protection codes which make it difficult to copy the disks. Yet the pirates, people who break the codes and copy software, say it's an "easy" way to build their software collection.

Software copiers often work together, trading pirated disks and exchanging secrets for breaking protection codes. They use programs like "Locksmith 4.1" and "Nibbles Away" that are specially designed to make copying simple. It takes two minutes to make a copy. They trade code-breaking secrets across the country, using modems to hook up with electronic bulletin boards that have names like "Pirate's Cove."

"Most of us are not selling programs to make a profit," says the 16-year-old pirate, who asked that his name not be used. "If one guy has it, everyone gets it. Eventually you get tired of playing *Pac-Man.* We're not the type of kids who run off a hundred thousand copies and sell them for $10 instead of the $30 list price."

It seems, in fact, that the majority of those who copy store-bought software are not doing it to *make* money, but to *save* money.

"Computer software prices are just ridiculous. It's silly to go out and spend that kind of money if you can get a copy," says David, 16, from New York City. David thinks that selling pirated disks is "definitely wrong," but he does sometimes copy and trade software with friends.

"Most pirates aren't bad people," says Keith, 16, David's classmate. They just compare the cost of a blank disk (about $2.50 to $3) with the cost of a game or other program disk (from $20 to several hundred dollars) and contend that copying is the only way they will be able to buy some programs. "Companies have a right to protect their software," admits Keith, but pirates "feel that it's just too expensive."

Those who are called software pirates often do not understand the big fuss. After all, they claim, they're just making copies like everybody else does.

"It's the same thing as Xeroxing out of a book or taping an album. It's even the same law, and you don't see anyone getting in trouble Xeroxing out of a book," says a 16-year-old who asked to be identified only as Le Boulanger (French for "the baker").

Le Boulanger sees most software copying as a crime without victims. "Who is being hurt?" he asks. Some say that the programmer who wrote the software is hurt because he or she won't get money for a disk that is copies instead of bought. But Le Boulanger says he has written software programs, was paid for them, and wouldn't really mind if people made copies.

"I don't think people should make thousands of copies and sell them," he says. "But if people want to make a back-up copy or trade software with a friend, they should be able to."

At least one software company agrees, in part, with LeBoulanger. Penguin Software, makers of *PieMan, Crime Wave,* and *The Graphics Magician,* is opposed to software piracy, but believes it's all right for customers to make copies of their own disks. Last year, the company removed all protection codes from its application and graphic utility software so that users could run a copy in their computer and use the original as back-up in case the copy was accidentally erased.

"It's a convenience," says Mark Pelczarski, president of Penguin. "We've asked people to please not make copies for friends." So far, the company has wound up selling more disks than before. Pelczarski says Penguin has heard from some pirates "who don't copy our disks because we are willing to take this chance."

Penguin does use a protection code on its *game* software to prevent people from copying those programs. But it has also priced all game software inexpensively. The $19.95 tag is "to discourage people from copying and encourage them to buy," says Pelczarski.

Making it less costly to buy the disk than to go to the trouble of copying it "is the responsibility of software companies," says one computer store owner. "I find it difficult to condemn software piracy when I see customers saving and then spending so much just to get a small library of software." This is especially true if the software doesn't work properly, or is difficult to use.

But isn't this store owner bothered by lost sales? "Most people make copies of programs they wouldn't buy anyway," he claims. "I don't really think it hurts my business."

'Pirate is so glamorous... They should be called thieves."

CON:

Copying Is Stealing

"When you make a copy of a program, even for your friend, it's no different from stealing," says John Reeves of Lifeboat Associates, a software publishing company. "It's like walking into a bookstore and taking a book without paying for it."

Every year, according to sources cited by security expert Donn Parker, between $200 and $600 million in sales is lost because of illegal copying. If pirated copies were not so widely available, computer companies contend, people would have bought software at the regular price. To make up for this lost income, software makers raise their prices.

So the cycle continues: as store-bought software becomes even more expensive, more people are tempted to use pirated software.

Companies are also devising ways to stop illegal copying before it gets started. They spend hundreds of thousands of dollars designing elaborate protection codes that are supposed to make it impossible for users to copy a disk. But most everyone seems to agree that there is no such thing as total security. "Any protection code can be beaten," admits Mike Berlyn, a project director at Infocom, makers of the *Zork* trilogy and other games.

"I know when I write a program," says one student of computers, "there will always be some 17-year-old computer whiz who'll crack the code with a few touches of the buttons."

Software pirates don't seem to understand that they are doing more than committing a crime against a company, says Broderbund Software's Ed Bernstein. "They are stealing someone's hard work ... I have seen many very talented people spend a year of their lives creating a program, only to have it ripped off the first day it's out."

"Ninety percent of the programs used by my friends have been copied," says 17-year-old Greg. "But I hope this changes. Stealing programs adds to the high cost of software. And I'd like to write and sell software."

Copying software hasn't always caused controversy. At one time, when only hobbyists and hackers had computers at home, making copies and exchanging programs wasn't considered such a big problem.

"In those days—only a few years ago, really — a lot of exchanging of programs went on because no one wanted to get stuck spending a lot of money on a turkey," says Mike Berlyn. "Now, that excuse is gone. There are fewer turkeys around and more magazines and places to find

> **"Piracy could dry up the source of good software."**

out whether a program is bad or good."

Leor Zolman, who has written *C*, a very popular program that translates programming code from one computer language to another, copied programs in his early days. But he no longer does it. In 1976, he desperately wanted a copy of a certain $400 BASIC program for his computer. "I didn't have that kind of money in those days. My computer only cost a little more than that," says Zolman. "Anyway, everyone was ripping off that program because it was so expensive and it didn't really do that much."

Today, Zolman tries to discourage others from pirating his software by offering a "good value." He stresses this point to users. "I have a note in my manual that even says that the program has been purposely priced so low [$150 instead of the $600 he could successfully charge] to persuade people to buy it rather than steal it."

Infocom, Mike Berlyn's company, also uses its manual and other packaging to discourage piracy. The elaborate packages for text adventures like *Suspended, Planetfall* and *Deadline* are as much a part of the game as the software. "We make the packages special and include lots of props ... we think that will make people want to own more than just a floppy," says Berlyn.

For some, such subtle discouragement is not enough. That is why there are laws against computer software piracy. Most cases seem to involve big-time "pirates" who copy thousands of disks to sell for profit. "There are lawsuits being brought every day involving illegal copying," says Lawrence Ochs, an attorney who specializes in this problem. But pirates are difficult to catch.

"Computer crime will never be eliminated," says security expert Parker. "The goal is to reduce it."

Unfortunately, he adds, the term "pirates" lends glamor to the copying of software. "The people who do it should be called thieves."

Attorney Ochs has some harsh words for those who allow software copying to continue though they know it's wrong. Even parents may be at fault, he says. "What parent is going to say 'No, Janet, you must go out and buy the program' if that parent knows she'll save $40 if her daughter copies it?"

Pirates claim that no real harm is done when they make copies of computer software. John Reeves of Lifeboat Associates very strongly disagrees. "In the long run, everyone gets hurt because software writers put a higher price on their programs."

The harm may be even greater, claims Broderbund's Ed Bernstein. "I know programmers who have stopped writing for certain computers because they know those programs will be stolen.... Piracy could dry up the source of good programs."

"With all this piracy," says one young computer user," it does get out of control." ⊡

DOUG GARR, a computer writer in New York, is the author of a new biography of Apple inventor Steve Wozniak.

What's Your Opinion?

Now that you've heard the arguments for and against copying computer software, ENTER wants to know what you think.

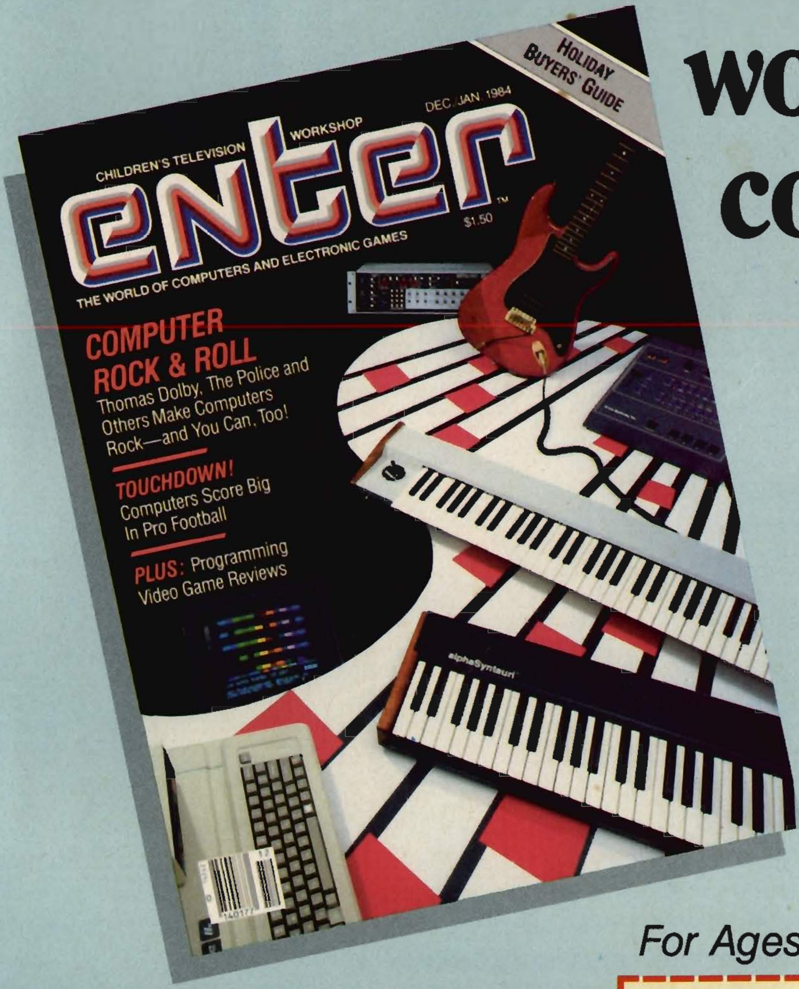
Is piracy a harmless act — a way for people to save money and build a software collection? Or is it a crime, stealing money from computer programmers and making legitimate software more expensive?

Did you know that copying software was illegal before reading these articles? Have *you* made illegal copies of software? Do you know others who make software copies?

Write and tell us your opinion. We'll feature your letters — both for and against copying software — in an upcoming issue. If you don't want us to print your name, just say so in your letter. Send your letter to:

ENTER Magazine
"Piracy"
1 Lincoln Plaza
New York, N.Y. 10023

ENTER the fun and challenging world of computers!


HOLIDAY BUYERS' GUIDE
CHILDREN'S TELEVISION WORKSHOP
DEC./JAN. 1984
enter™
$1.50
THE WORLD OF COMPUTERS AND ELECTRONIC GAMES
COMPUTER ROCK & ROLL
Thomas Dolby, The Police and Others Make Computers Rock—and You Can, Too!
TOUCHDOWN!
Computers Score Big In Pro Football
PLUS: Programming
Video Game Reviews
alphaSyntauri

For Ages 10-16

Now from the people who brought you **SESAME STREET, THE ELECTRIC COMPANY,** and **3-2-1 CONTACT** comes **ENTER,** the magazine that is as exciting as computers themselves. There is news about computers, video games and everything from lasers to robots — plus puzzles, board games, quizzes and other features that make learning about computers easy and fun. You won't want to miss an issue. So order your subscription now.

Parents will love **ENTER** too. It'll explain why computers are such an important part of everyone's future.

enter subscription form

☐ Yes! Please send 1 year (10 issues) of ENTER for only $12.95

CHILD'S NAME ____________________ AGE ________

ADDRESS ______________________________

CITY____________ STATE __________ ZIP__________

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

____

____

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

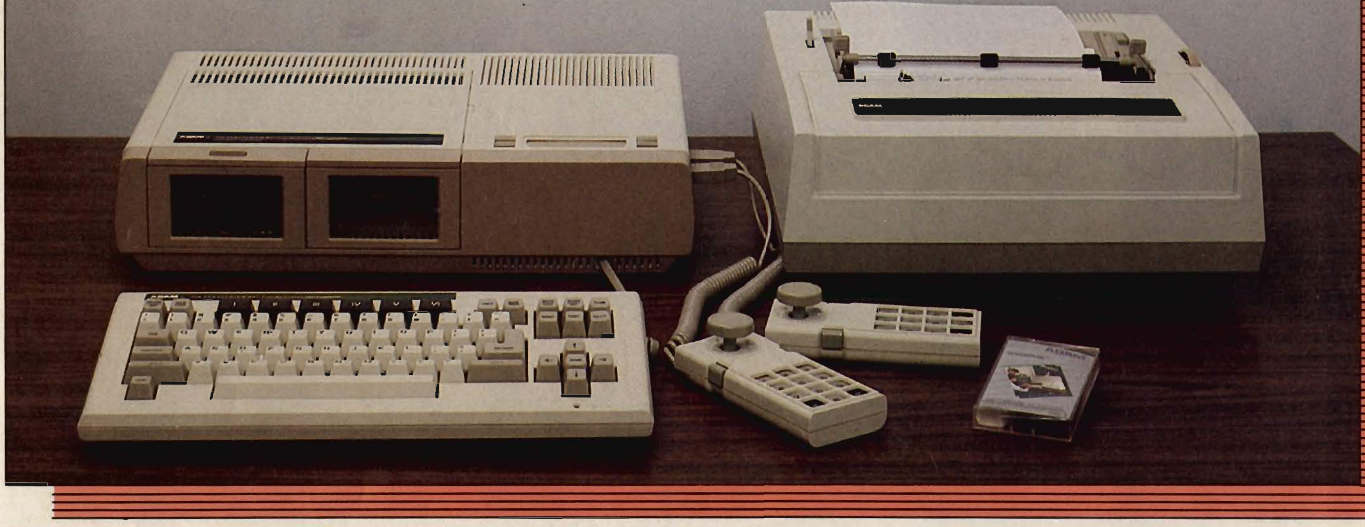
MAIL TO: ENTER Magazine
One Disc Drive, P.O. Box 2685, Boulder, CO 80321

Subscription to Canada and other countries, add $4.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery.

4HEL8

ALL ABOUT ADAM

BY RICHARD CHEVAT AND GREG TRAUTMAN



We read the ads and saw the commercials—but it took us weeks to actually get our hands on one. We're talking about the Adam, of course, Coleco's new home computer.

Coleco did not make any Adams available to reviewers before Christmas. However, we did manage to spend a few hours using an Adam. Based on what we saw, we thought the Adam was a good, user-friendly system that might be just right for the beginner computer-user.

Of course, we're assuming that the Adam you buy will work like the one we used (more on this later). Keeping that in mind, here are some of the points we covered in an afternoon with Adam.

HARDWARE: WHAT YOU GET

The most user-friendly of all of Adam's features is its price tag. For around $700, you get a package that includes a typewriter-style keyboard, two Coleco joysticks, a letter-quality printer, and a memory console that houses a slot for ColecoVision cartridges and one "datapack" drive (with room for a second). Adam comes with built-in word processing software, and BASIC on a datapack. If you already own ColecoVision, you can buy an expansion set for around $450 that will give you the same system.

MEMORY: The Adam comes with 80K RAM, but only 64K is available to the programmer. It's expandable to 144K (really 128).

KEYBOARD: We both were very impressed with the Adam keyboard. The keys are well-placed and feel comfortable. We especially liked the labeled "smart" keys, which give you one-stroke use of some of the word-processing functions. There are also six function keys across the top, which are used by the word processor and other software. We also liked the fact that the keyboard was not part of the memory console. It's connected by a cable, so you can move it around freely.

PRINTER: Well, it *is* a printer; that's the most important thing. And it does give letter-quality print, with changeable daisy-wheels. It just takes an awfully long time and makes a lot of noise doing it.

DATAPACK: This is the big innovation that Coleco has talked about so much. It's basically a very fast tape that you use like a disk. You operate it with Disk Operating System (DOS) commands that are just like Apple DOS. For example, you don't have to use a tape counter to remember where your program or file is. In fact, there *is* no tape counter. Instead, Adam builds a directory on the datapack, which you get at with the DOS command CATALOG.

The datapack is certainly easier to use and faster than a regular tape. This puts it a step above the memory system that many beginners use. However, it is still a long way from being the equal of a disk drive. Not only isn't it as fast, but it's not a true random access device. That means it isn't that convenient to access the datapack with a program.

PERIPHERALS: Even Coleco recognizes that Adam users might want the ease and speed of disks. They've announced plans for a 5¼" disk drive for the system that will be available in late 1984. Also, a SmartModem for the Adam will be available soon.

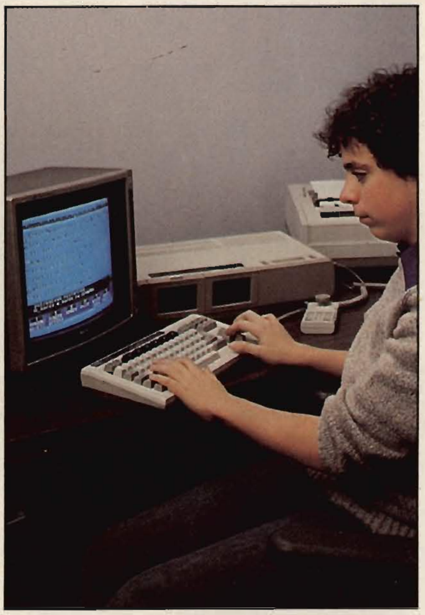
SOFTWARE

WORD PROCESSING: This is one of Adam's biggest selling points, and we thought it was a good one. The Adam's word processing system is very easy to use. We had no trouble learning how it worked after just a few minutes of experimentation, and without reading the manual. We *didn't* like the fact that changes can be made only in a work area at the bottom of the screen. But, all in all, the word processor with the printer is one of the main reasons the Adam is such a good buy.

BASIC: Adam comes with Applesoft BASIC. That's a big plus. However, unlike the Apple, you can't edit lines on Adam—you have to retype the whole line. That is a definite minus.

GAMES: If you like ColecoVision, you'll love Adam. It will play any of the existing ColecoVision cartridges. Personally, we don't like the ColecoVision joysticks, but that's a matter of taste.

OTHER SOFTWARE: Coleco has announced plans for dozens of pieces of software to be produced in datapack versions. A number of them are popular games that are already out for other machines, like *Miner 2049er* and *Zaxxon.* They also have a SmartLogo, a SmartFiler, a home money manager and other software in the works. A lot of this software will also be available for the Adam on disk, so it seems that software availability will not be a problem.



Testing: Greg Trautman on the Adam.

SHOULD YOU BUY?

The best thing about the Adam is that for a relatively low price you can get a *complete* computer system. This makes it especially attractive for people who are just starting out, want a whole system, but don't know if they are serious enough about computing to make a large investment.

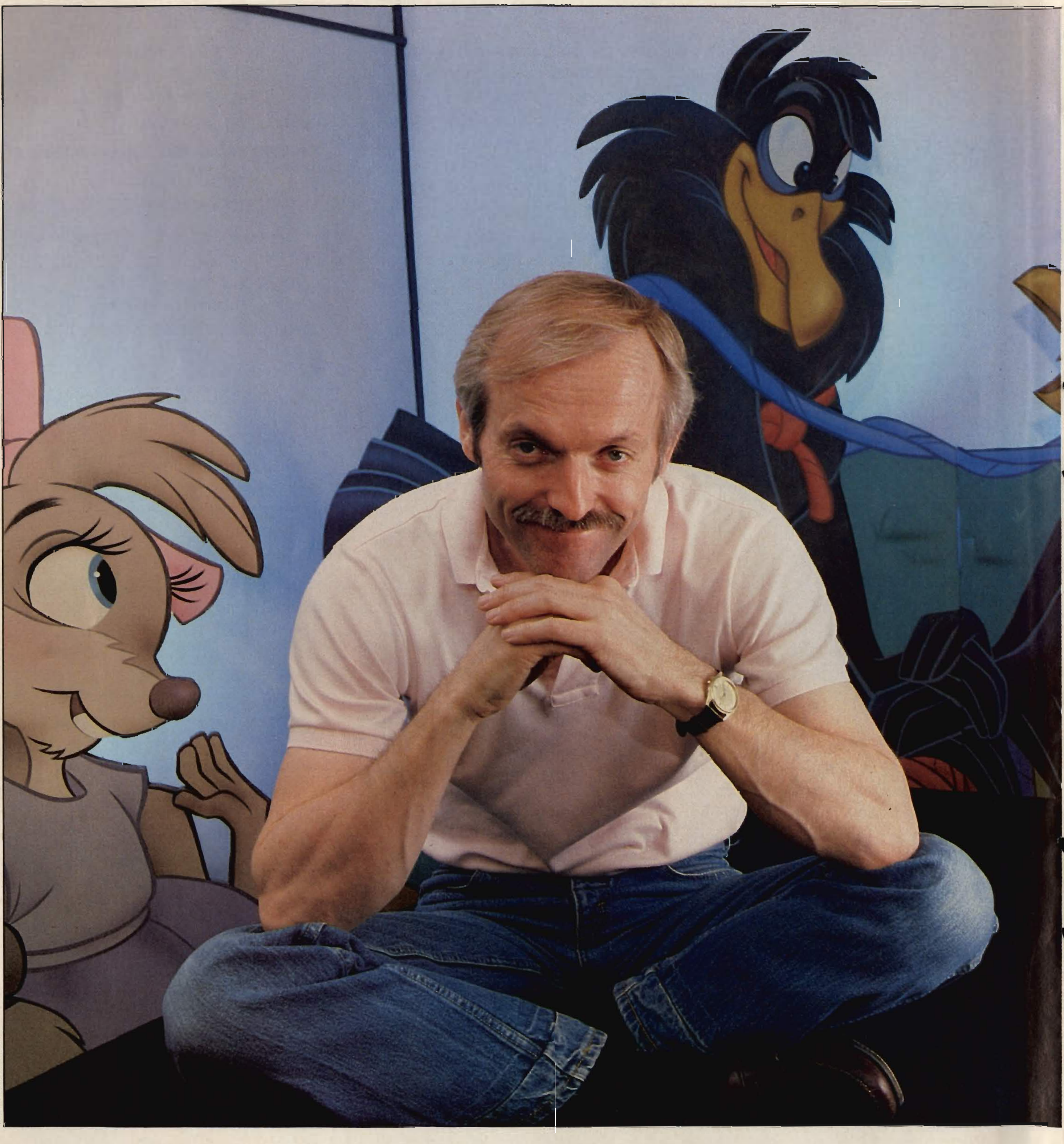
However, the Adam is a system that you can easily grow out of. A disk drive and a faster, quieter printer are just two of the ways we think many people would want to expand on it. So, if you're sure you're serious about computing and you want real flexibility, the Adam is probably not for you.

The other big question we had about Adam was its reliability. The one we used worked quite nicely. However, we've heard from several Adam owners whose machines did everything from chewing up datapacks to locking up for no apparent reason.

Probably, like any new product, it will take a while for the bugs to be worked out of Adam's system. So, even if you're sure the Adam is for you, we'd advise you to make sure Coleco has solved its production problems before buying. ⊑

RICHARD CHEVAT is ENTER's Technical Editor. GREG TRAUTMAN, 17, is a member of ENTER's Advisory Board.

BEYOND THE



© DAVID STRICK

'DRAGON'S LAIR'

DON BLUTH ANIMATES A NEW GENERATION OF LASER DISCS

BY ELIZABETH MEHREN

Don Bluth was *not* pleased.

The co-creator of *Dragon's Lair,* the first laser disc game, and of *Space Ace,* the newest animated disc game, had just been told that someone, somewhere, had figured out *Dragon's Lair*'s pattern of 42 choices—and beaten the game.

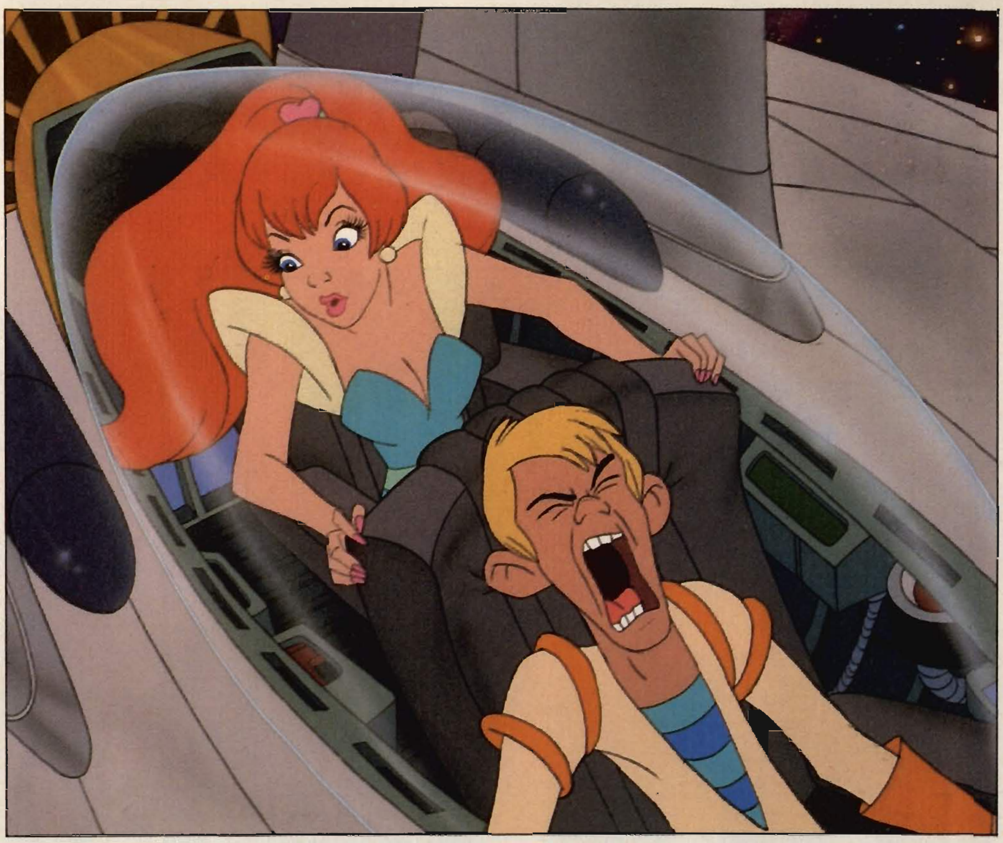
Bluth looked up from the drawing board at his studio, where he was hard at work on *Time Warp,* the sequel to *Dragon's Lair.* A steely look came into his eyes. "They want it hard?" he said. "They'll *get* it hard." With that, the wiry silver-haired animator went back to work, dreaming up even more fiendish choices for the next game to stump arcade-goers.

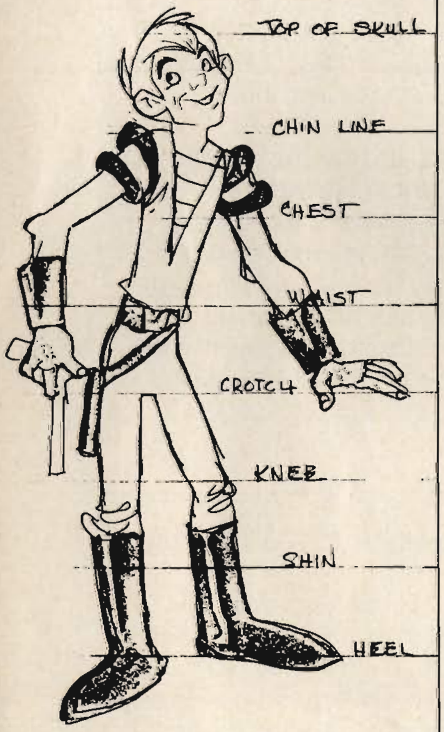
LASERS LIGHT UP ANIMATION

Bluth, 46, has been a professional artist since he began working for Walt Disney in 1956. Bluth was 18 years old then, and just out of high school. Over the next 25 years, he worked on the animation for a number of Disney films, including *Sleeping Beauty, Robin Hood,* and *Pete's Dragon*. He left Disney's

It's "no more Mr. Nice Guy" for Don Bluth, creator of 'Space Ace.'

The space age adventures of* Space Ace *began when Don Bluth drew the first simple sketch of its daring hero, Dexter.





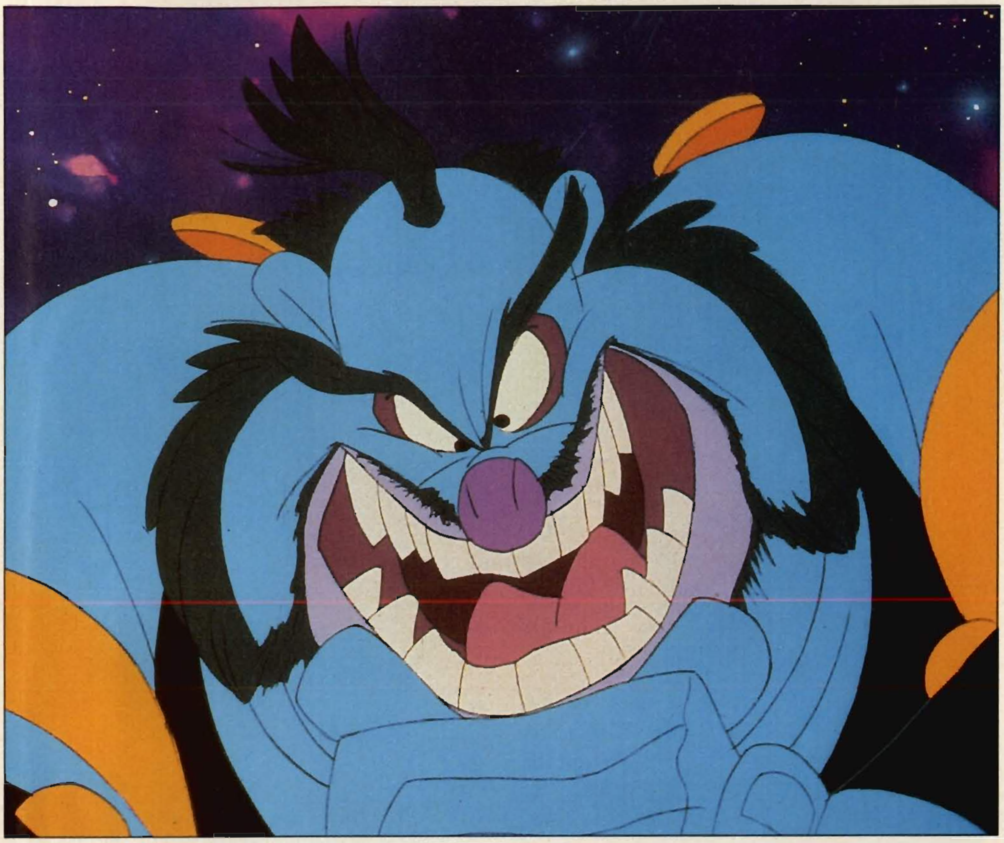
DEXTER IS SEVEN HEADS HIGH.

company a couple of times over the years. In 1979, he went off on his own permanently, forming Don Bluth Studios. Don's first project was his own full-length animated film, *The Secret of NIMH*, in 1981. But it wasn't until two years ago, when he met Rick Dyer, that Bluth learned the secret of his success. It was Dyer—a computer technician and the president of Advanced Microsystems, Inc. (AMI)—who said the two words that were to change Bluth's life: "Laser Disc."

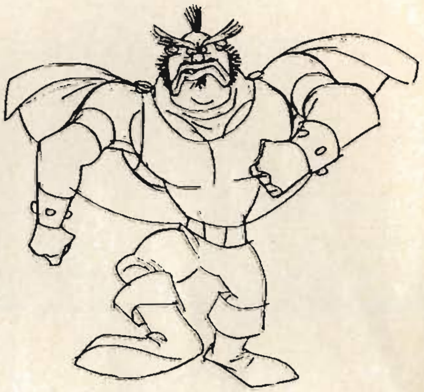
"Someone at AMI had seen *The Secret of NIMH*, and called to ask if we had ever thought of combining animation with laser discs," recalls Gary Goldman, producer for Bluth Studios. "We were looking for ways to revive animation, but we didn't know the technology existed."

In retrospect, this high-tech marriage may sound obvious, but *no one* had thought of it till then. Laser disc technology was not exactly sweeping the nation at the time. The Pioneer Corporation had 5,000 disc players sitting, unsold and unused, in a Los Angeles warehouse. Rick Dyer suggested to Bluth that these disc players—phonograph-type devices that provide a picture and stereo sound when a laser beam reads the information on a special disc—would be perfect for an animated video game. He pointed out that high-quality animation, combined with laser disc's *random access* capability (the ability to skip to more than 1,000 spots almost instantaneously) could make the game a hit.

Dyer was right. *Dragon's Lair* revolutionized arcade play. "It was the *Pong* of its kind," Dyer says today, "probably one of the most successful games in history." *Dragon's Lair* went into production in February, 1983, and became *the* arcade hit of the summer. Bluth figures that his and Dyer's company will gross over $240 million on *Dragon's Lair*. And their success did not go unnoted. By the fall of 1983, arcade game companies were falling all over each other in the rush to create their own disc games. Of the imitators, Bluth and Dyer say: "Our games emphasize quality. These other games are bombs; they're already dead." (Arcade game companies would not agree; dozens of new disc games are due out this year.)



Space Ace ***features 40 different tracks of music, sound effects and dialogue—and that blue-tinted alien bad guy named BORF.***



SPACE ACE—AND BEYOND

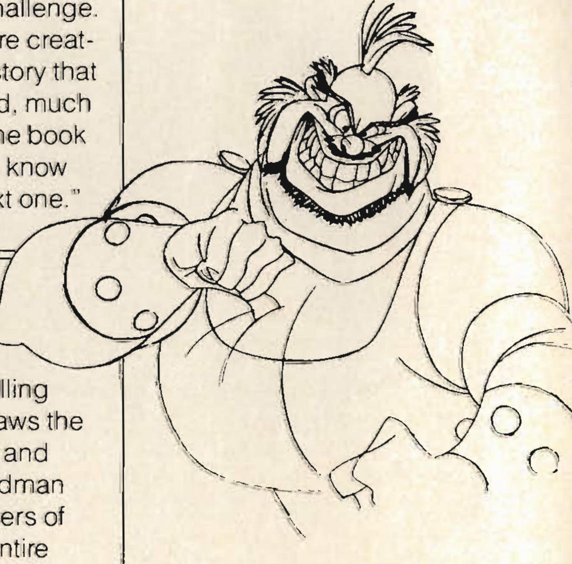
Don's new disc game, *Space Ace*, due out in arcades last month, marks some major advances over *Dragon's Lair*, according to Bluth. There *are* similarities: both games feature heroic men saving damsels in distress. In *Dragon's Lair*, Dirk the Daring was a swashbuckling knight wending his way through a castle of 38 treacherous rooms. In *Space Ace*, the 21st century hero is Dexter, whose girlfriend Kimberly has been kidnapped while the couple was vacationing on an asteroid. The bad guy is BORF, a blue-skinned commander of alien forces. Dexter has one unique power: at certain points in the game, he turns into Super Dexter and becomes invulnerable to attack. "It's Clark Kent in space," says Rick Dyer.

But plot isn't the main attraction in *Space Ace*. The graphics are again high-quality Disney-style (Bluth-style?), but the game play has been made even faster than *Dragon's Lair* (you make a decision every second and a half!), and there is more branching in the story. In addition, the soundtrack has been vastly upgraded. It is now continuous (*Dragon's Lair*'s music was intermittent), and contains 40 different tracks (35 for sound effects, 3 for music, 2 for dialogue) where *Dragon's Lair* had only 14 tracks.

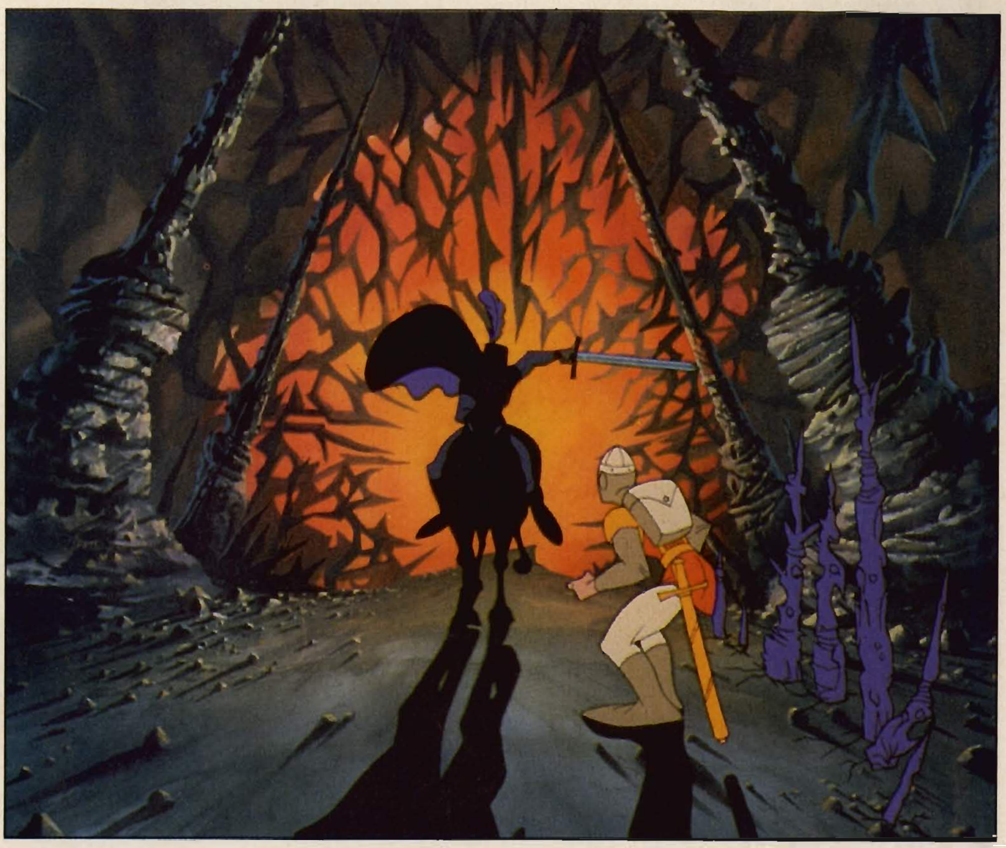
Dragon's Lair's game play has been criticized for being "one dimensional." Once you know the pattern, players complain, the game is no longer a challenge. Rick Dyer responds: "What we are creating is an interactive story. It is a story that has a beginning, middle and end, much like a movie. Once you've read the book or seen the movie, of course you know how it ends. You go on to the next one."

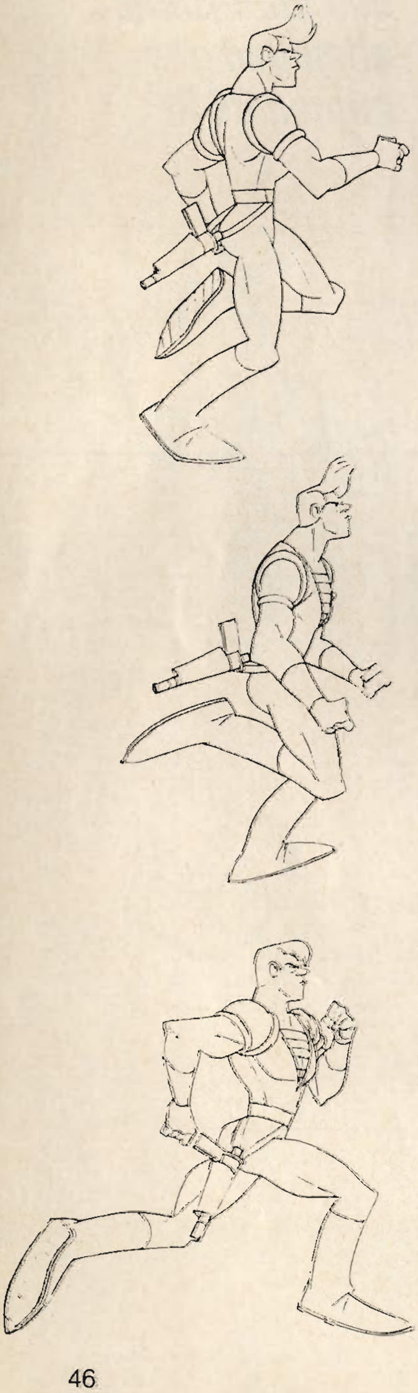
CREATING THE GAMES

In creating all the Bluth Studio games, Don is clearly the controlling intelligence. "He creates and draws the characters, lays out the scenes, and directs the animation," Gary Goldman explains. "Don wrote three-quarters of *Space Ace*, story-boarded the entire thing, and directed the sound effects



In* Space Ace, *Dexter can become near-invincible by turning into Super Dexter.





and colors." Other artists do the painstaking work of animating the actions, but Bluth, naturally, reviews all the final sketches.

Bluth's blueprint calls for his studio, which employs over 120 animators, technicians and support staff, to create four new games a year. In *Dragon's Lair II: Time Warp,* Bluth says, "You are going to get something a little different." Digital stereo sound, a dialogue between characters, and a storyline that has Dirk the Daring travelling through different historical eras are part of that "something different." "The new game will be a lot of fun," Bluth claims, "because while you are playing it you will also be learning something."

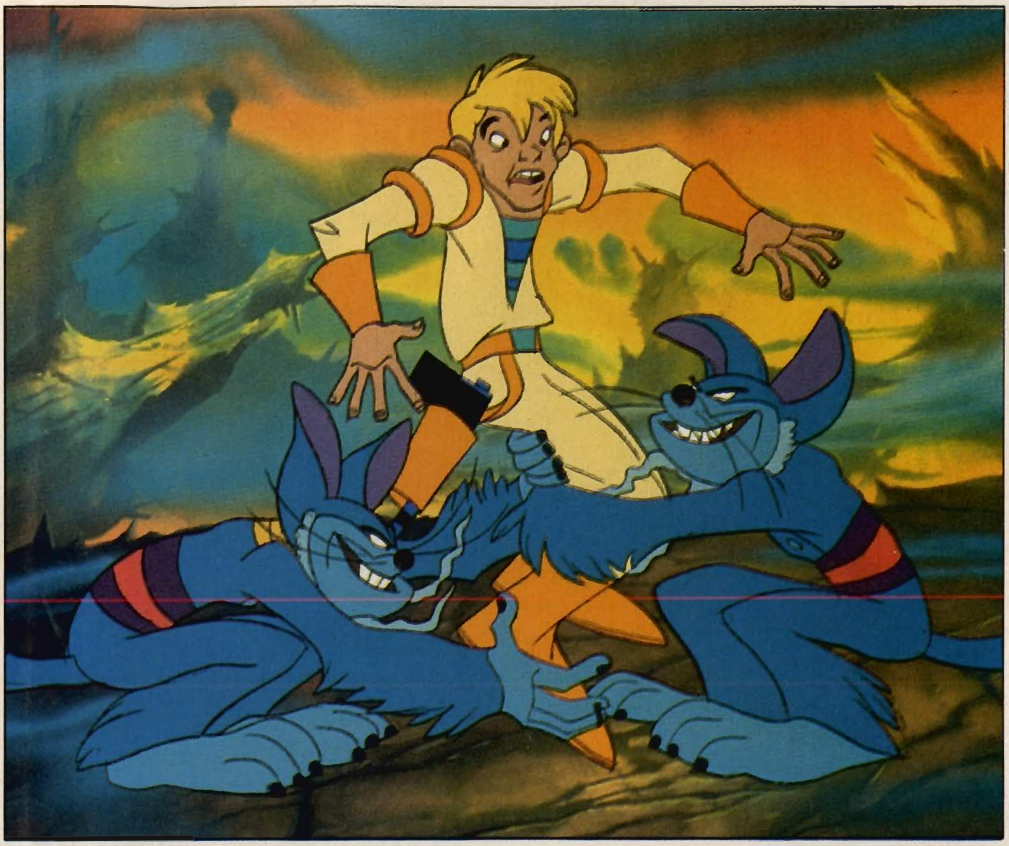
"It seems to me," he adds, "that if kids are going to spend billions of dollars a year in arcades [over $5 billion was spent in 1981], that they ought to get something special." He complains that stick-and-dot games are "violent." While the "threat-resolution" formats of *Dragon's Lair* and *Space Ace* aren't exactly peaceful, Bluth feels that his games are more optimistic and humane than most. "I want to make sure this medium can spread as much hope as it does doom," he says. "I don't want to put anything into a game—I don't care *how much* money it makes—that's going to make the world worse."

Don also claims, proudly, that *Dragon's Lair*—unlike many arcade games—is played cooperatively. When he was in Denver recently, he watched eight kids pooling their efforts and their money to play *Dragon's Lair.* "They got involved," he says. "They laughed. They giggled. They worked together."

Don contends that laserdisc games like *Dragon's Lair* aren't simply a matter of using skill to zap the enemy. "They're more like theater. Now we have characters, plots, adventure—which were never there before."

INTO THE FUTURE

Laser disc games are still in their infancy, Bluth points out. "It's very interesting to watch what's happening on the horizon. There are really no limits to where this could go." One place it is going is into home systems. Coleco will release *Dragon's Lair* in June of this year.



***Bluth has now gone from* Dragon's Lair *(opposite page) to* Space Ace *and beyond—* Dragon's Lair II.**

And more development is coming. "We're trying to develop two-player games. We're working on more branching, faster pacing, more sound and even better graphics," says Gary Goldman. "As for more control over characters, that's coming, too—but slowly. We hope to develop games that will allow you to move a character in four directions, instead of the two now possible. Sometime in the future, we envision people watching full-length feature movies in which they can decide on how the film should end—*participatory* films. But more control over characters and action will be a slow process."

One thing that pleases Don Bluth about the success of animated disc games is that they have revived the animation industry. Animation is something Bluth has loved since he saw his first Disney film, *Snow White,* when he was six years old. "I never got over it," he says with a sigh.

Bluth began pursuing a career in animation while still in school. "I drew and drew," he remembers. "I didn't go out for track, football, or any sports. I just drew."

He credits Gwennie, an older girl in his hometown near Salt Lake City, Utah, with feeding his young imagination. Gwennie would tell Bluth and his buddies creepy ghost stories. Bluth recalls loving every bone-chilling moment of them. They led him to fantasies of his own derring-do, so it's no coincidence that both of Bluth's heroes—Dexter and Dirk—share an initial with their creator.

DON'S NEXT PROJECT: AN ANIMATED TRILOGY

Bluth is currently at work on a number of new concepts for laser games, and is talking about a full-length animated musical movie—maybe even a trilogy. With all this work ahead of him, it is questionable if Don Bluth will ever find the time to master his own games. As it is now, he says about *Dragon's Lair,* "Every time I play it, I die."

ELIZABETH MEHREN, a writer in Los Angeles, shares Don Bluth's dilemma: she, too, dies every time she plays Dragon's Lair.

ONE CENTER PLAZA

© RALPH MERCER

BOSTON'S BIZ KID

JON ROTENBERG: A COMPUTER V.I.P SINCE HE WAS 13

At first glance, there's nothing remarkable about him. He's 21, but looks younger. He's skinny and he's tall. He speaks with a New England—Boston—accent.

But then you hear little facts—amazing facts—about him, and you look a little closer. Facts like these:

- Computer companies pay him up to $1500 *a day* to be a consultant.
- He invented and ran the "Applefest," the first successful machine-specific convention ever.
- He's the founder and president of the largest group of computer users in the world, the Boston Computer Society (BCS).
- He was the organizer and moving force behind "Softcon," last month's huge computer software show in New Orleans. He rented out the New Orleans Superdome and attracted more than 1,400 software companies to exhibit their products.

Clearly, there is something remarkable about this skinny kid from Boston named Jonathan Rotenberg.

"Jon is undefeatable when he wants to do something," says Tracy Licklider, a computer industry executive who is on the board of the BCS. "And what he wants to do is demystify the computer."

Jonathan's main work over the past eight years has been as head of the BCS. He founded it in 1975—when he was 13—and has seen it grow into the largest, most active and influential computer group in the world. The society, which has over 7,000 members, sponsors 22 user groups. Owners of Apple, Commodore, Osborne, IBM, TI, DEC and many other computers meet regularly at the BCS's downtown Boston headquarters to compare notes and discuss

BY MITCHELL LYNCH

problems with their machines.

The BCS offices can hold up to 120 visitors at one time. The staff handles more than 1,000 phone calls a week and gives out all kinds of advice about computer problems.

The society also publishes a slick, well-put-together magazine called *Computer Update*. Rotenberg (he pronounces it like Roat-enberg) airs his views in his monthly column, "The View from Center Plaza" (which is where the BCS offices are located).

A KID AND HIS COMPUTER

Jon's career began when he was 13. His prep school had bought an Altair computer kit and Jon, fascinated, helped his teachers assemble it. (Ready-made home computers were not common in 1975.) But once the computer was assembled, no one at the school knew quite what to do with it.

Jon found the experience very frustrating. "Why," he wondered, "aren't more people involved in learning how to make use of computers?"

Jon and a friend decided to form a computer club, where people could meet and talk together about their computer uses and problems. So in the middle of the winter of 1975, the "Boston Computer Society" prepared to hold its first meeting. Jon and his friend went to a number of computer companies and distributed leaflets announcing the meeting. One winter day, they went to the hall where the meeting was to take place, and waited. And waited.

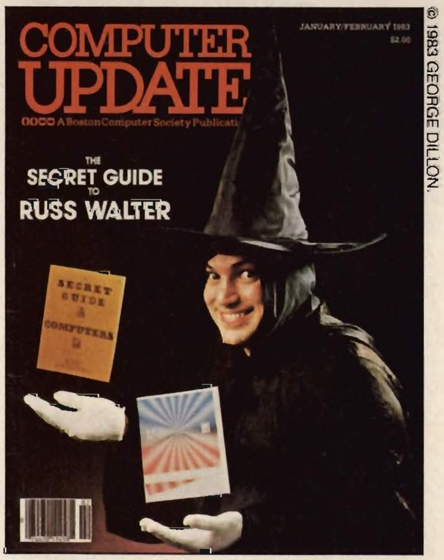
No one showed up.

Jon's creation, the Boston Computer Society, has 22 user groups and over 7,000 members.

Jon's friend quickly lost interest in the project. He quit, and soon after left Boston. But Jon didn't give up. With his father's help, he began publishing a newsletter about new computer products and upcoming computer shows in the Boston area. He and his dad, a real estate agent, drove all over town distributing the newsletter to computer stores and companies. A few months later, Jon called another meeting. This time, 57 people showed up.

"Boy, was I relieved," he recalled. Jon ran the meeting, but he felt a little self-conscious. "I called myself 'meeting coordinator' because I didn't think I could be president. I had braces on my teeth. My voice was changing."

It didn't bother any of the adults who came to the meeting. Many people were impressed by the professional way Jon handled himself. Gradually, the Boston Computer Society began to gain members and respect.


COMPUTER UPDATE
JANUARY/FEBRUARY 1983
$2.50
A Boston Computer Society Publicati
THE SECRET GUIDE TO RUSS WALTER
SECRET GUIDE TO COMPUTERS

© 1983 GEORGE DILLON.

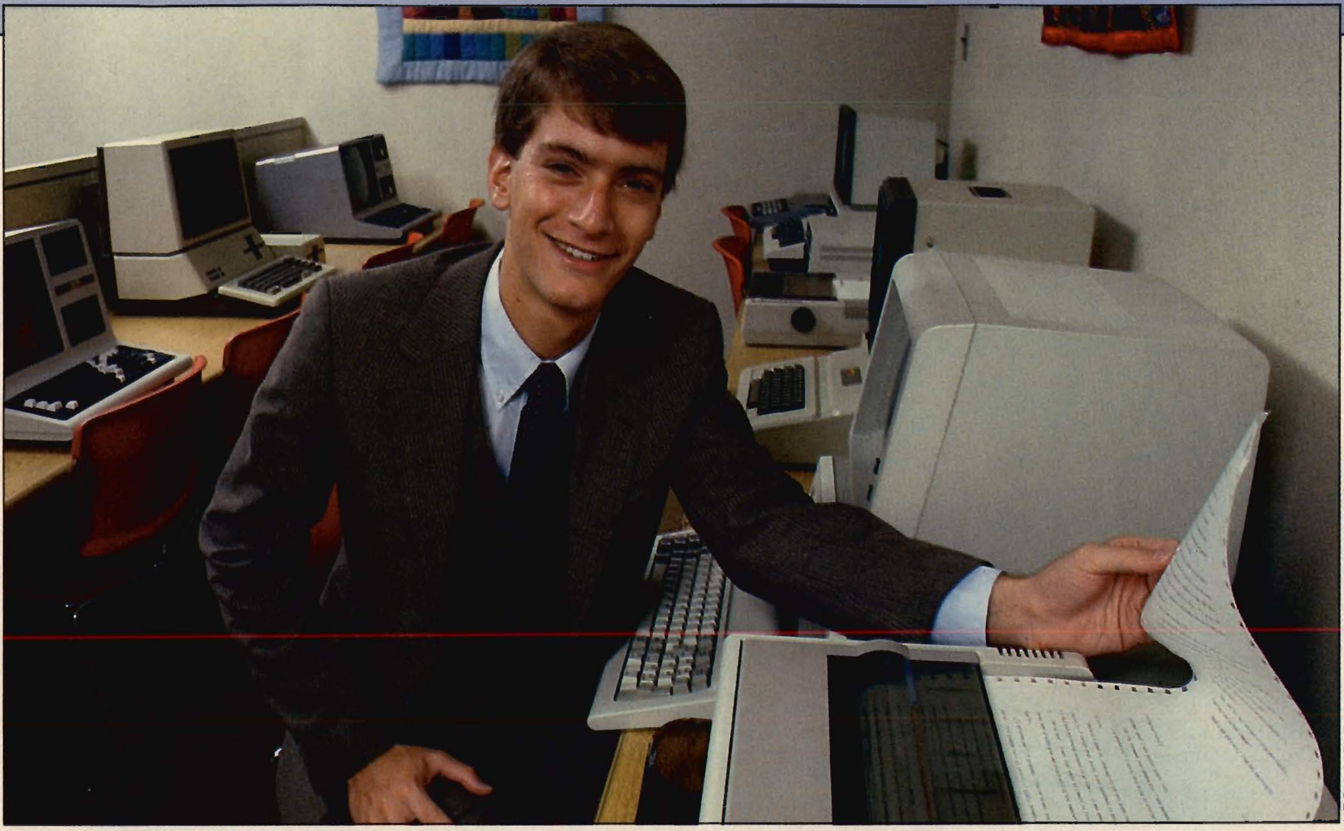
***Jon's small newsletter became the BCS magazine* Computer Update.**

FAME, FORTUNE AND COLLEGE

As the BCS grew, Jon became more and more well-known to companies. Some executives thought his word was important, and began approaching him for his opinions on their products. When the Digital Equipment Corporation was getting ready to introduce its new personal computer in 1982, it sent a helicopter to Boston to pick Jonathan up and bring him to their offices 50 miles away in Maynard, Massachusetts. Then Steve Jobs, chairman of Apple, visited the BCS. Jobs was so impressed that he offered Jonathan a job working for Apple. The computer industry was banging on this 18-year-old's door—and banging hard.

Jon said no. He went away to college at Brown University, and decided *not* to major in computer science.

"After all, college is supposed to be a broadening experience," he says. "I already knew about computers. I wanted to learn about things I don't know." He turned down the job at Apple. "I thought about it for five minutes," he told one reporter. But, he explained, "I like college, and it's not as if the opportunities will go away. They get better."



As founder of the world's largest computer users group, Jon aims to demystify the computer.

Jon is scheduled to graduate from Brown this June. His next major project is a $1.5 million computer discovery center, which he hopes to open in Boston sometime in 1985. Here, people will find most of the major products available to test. They will actually be able to work with the machines without pressure from computer salesmen. The center will also feature classes, a computer book library, and a testing laboratory.

EXPANDING THE SOCIETY

Jon's ultimate goal is even bigger. He'd like to expand the Boston Computer Society into a national organization with chapters all across the nation. While Jon doesn't claim to be an active programmer, he has definite ideas about the role computers play. "Kids spend too much time with computers, even more than they spend watching television. The computer can be the ultimate playmate. This would prevent contact with other human beings and cause kids to lose their ability to communicate with people."

Jon also feels that most video games are too destructive, emphasizing destroying things in order to win. "I'm trying to devise a game where the contestants try to build something, rather than destroy it. The winner should create something."

At 13, Jon launched his computer club. It has grown beyond anyone's wildest dreams.

Jon's story is remarkable, and he knows it. His achievements with the BCS are a testament to his superb administrative skills, his timing, and a lot of luck. "I don't want people to think kids are supposed to form computer clubs," he says now. It's an extremely difficult job, he cautions, and requires experience that most kids simply don't have.

He admits that being a kid sometimes created problems for him, too. Once, he was talking on the phone with a businessman about putting on a computer show. The man suggested that Jon join him after work for a drink.

"I can't," Jon said.

"Why not?" the man asked.

"I'm only 15," Jon replied. E

MITCHELL LYNCH writes for the Wall Street Journal *in Boston.*

FACE-OFF
ENTER CONTEST #1

Do you know these faces? If you do, there may be an Atari 600XL home computer and a whole library of Activision software in your future.

Pictured here are six personalities whose photos have been digitized by a computer. To enter ENTER Contest #1, you have to identify each personality and give an accurate one-sentence description of how he or she is tied in to the world of computers, electronics, or space exploration.

Some of our digitized personalities are real people, some are movie characters, and one is totally fictional. Their connections to high technology aren't always obvious. There also may be more than one correct description. Judges will decide which answers are acceptable.

If there is a tie, a tie-breaking contest will be required. Thirty other entrants will win ENTER t-shirts.

Don't forget to fill in the entry form below. All entries must be postmarked no later than April 15, and the drawing will be held on May 15.

Send your entries to: ENTER Face-Off
P.O. Box 777
Ridgefield, NJ 07657

Prizes for this contest provided by Activision.

FACE-OFF: ENTER CONTEST #1

Name________________________

Address________________________

City____________State and Zip______

Grade____Age____Male____Female____

T-Shirt Size: Kids' Large____Adult Small____

Medium____Large____

I know who those faces belong to. Here are their names, and their high-tech tie-ins.

1 *NAME:*____________________
*TIE-IN:*____________________

2 *NAME:*____________________
*TIE-IN:*____________________

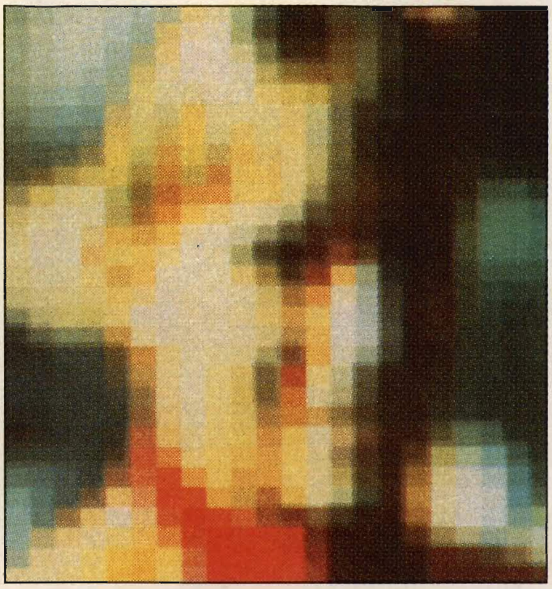
3 *NAME:*____________________
*TIE-IN:*____________________

4 *NAME:*____________________
*TIE-IN:*____________________

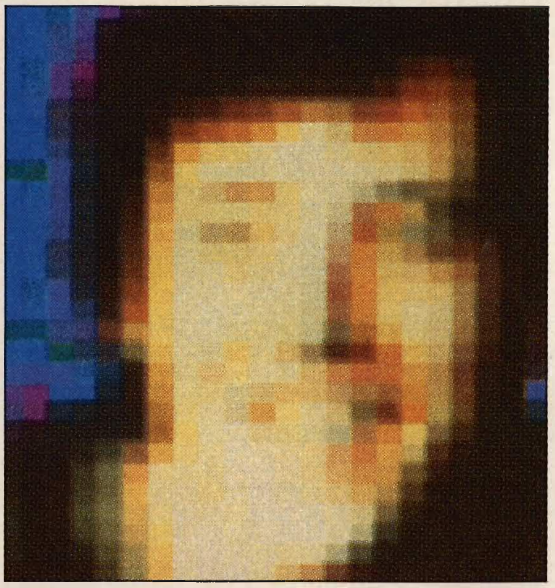
5 *NAME:*____________________
*TIE-IN:*____________________

6 *NAME:*____________________
*TIE-IN:*____________________

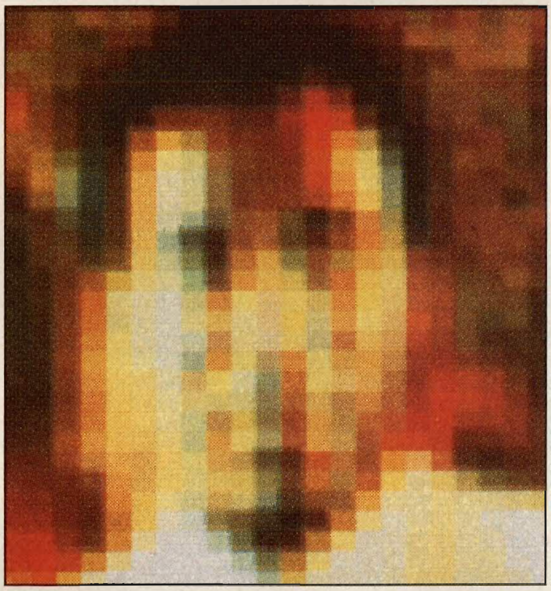
1



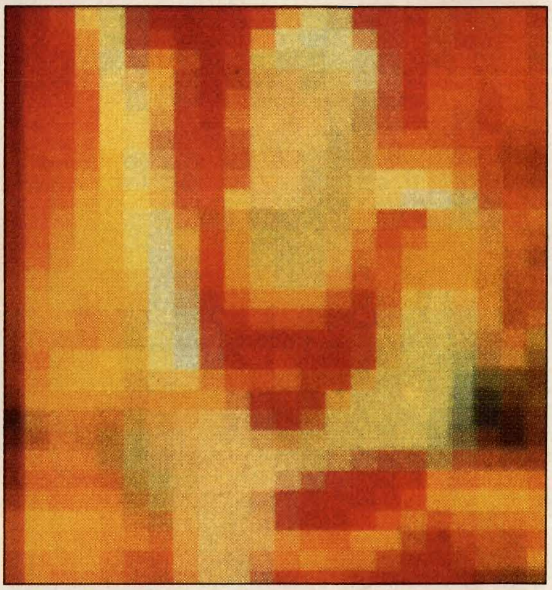
2



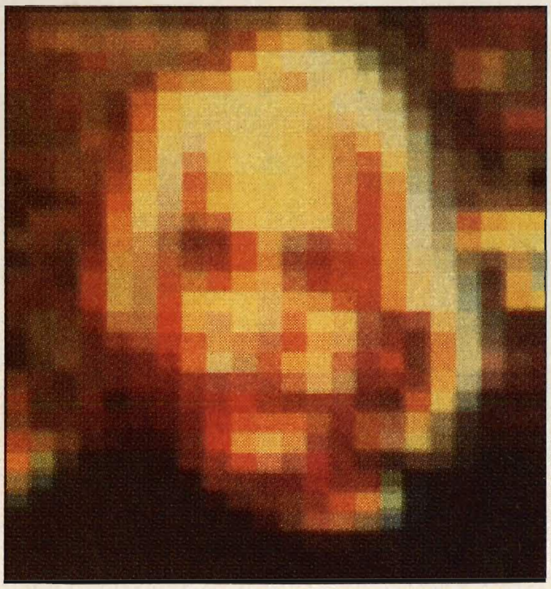
3



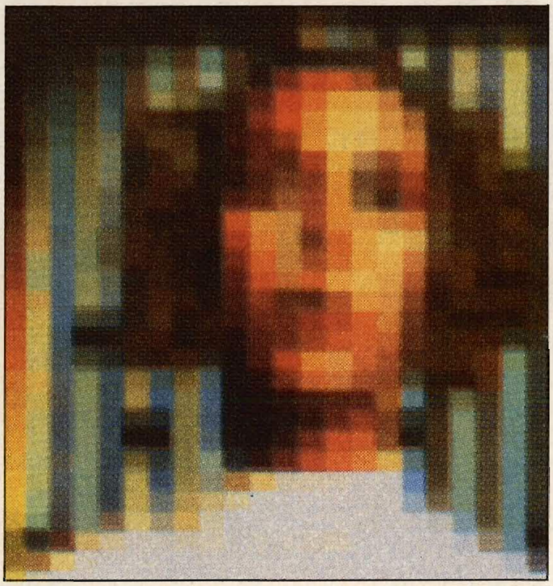
4



5



6



PHOTOS DIGITIZED BY NATIONAL IMAGEMAKERS, INC.

SESAME STREET ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
Sesame Street for only $9.95.
☐ I prefer 2 years (20 issues) for only $18.95.

CHILD'S NAME ______ AGE ______

ADDRESS ______

CITY ______ STATE ______ ZIP ______

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

______

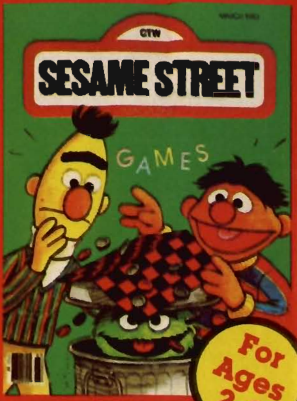
______

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

MAIL TO: Sesame Street Magazine
P.O. Box 2894, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8HNE9

ENJOY WITH SESAME STREET



Sesame Street Magazine—Big Bird and his delightful friends will bring dozens of playful surprises, ten terrific times a year. (It's the entertaining education that Sesame Street does best!) Puzzles, cut-outs, games, A-B-C's, 1-2-3's...there's all the magic of the TV super-series in every colorful issue.

For Ages 2-6

THE ELECTRIC COMPANY ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
Electric Company for only $9.95
☐ I prefer 2 years (20 issues) for only $18.95

CHILD'S NAME ______ AGE ______

ADDRESS ______

CITY ______ STATE ______ ZIP ______

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

______

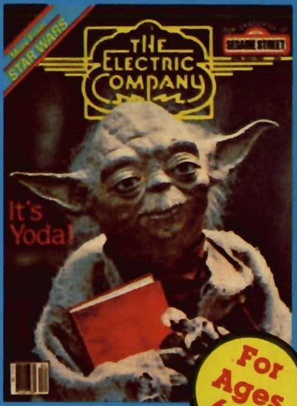
______

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

MAIL TO: The Electric Company Magazine
200 Watt Street, P.O. Box 2922, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8HNF7

ENTERTAIN WITH ELECTRIC COMPANY



The Electric Company Magazine—as creatively entertaining as the T.V. show kids love. It's amusing, playful, absorbing and educational for beginning and young readers. Enjoy ten colorful issues filled with puzzles, posters, cut-outs, Spidey super stories, jokes...and sunny smiles.

For Ages 6-10

3-2-1 CONTACT ORDER FORM

☐ Yes! Please send 1 year (10 issues) of
3-2-1 Contact for only $10.95.
☐ I prefer 2 years (20 issues) for only $19.95.

CHILD'S NAME ______ AGE ______

ADDRESS ______

CITY ______ STATE ______ ZIP ______

LIST BILLING NAME AND ADDRESS IF DIFFERENT FROM ABOVE.

______

______

☐ BILL ME LATER ☐ PAYMENT ENCLOSED

MAIL TO: 3-2-1 Contact
E = MC Square, P.O. Box 2931, Boulder, CO 80322

Subscriptions to Canada and other countries, add $6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery. 8HNG5

EXPLORE WITH 3-2-1 CONTACT

A Science Magazine from CTW, the Creators of Sesame Street
3-2-1 CONTACT
Hang On!

3-2-1 Contact—Science is fun. And you can make it a year-long learning adventure for your favorite 8-12 year olds. 3-2-1 Contact will bring ten big issues packed with puzzles, projects, experiments, questions and answers about the world around us. It's an involving, fun way to learn!

For Ages 8-12

BASIC TRAINING

PROGRAMS FOR APPLE, ATARI, COMMODORE, IBM, T.I. AND TRS-80 COLOR COMPUTERS

Welcome to BASIC Training, whose unending mission is to contact young programmers, seek out and explore new computer uses, and boldly program where no one has programmed before.

This month we present for the first time a program for the TRS-80 Color Computer. We're also including three programs written by ENTER readers. If you have a program you'd like to see published in ENTER, send it in! And don't forget to check out this month's BASIC Training challenge, where we ask you to test your programming skill and imagination.

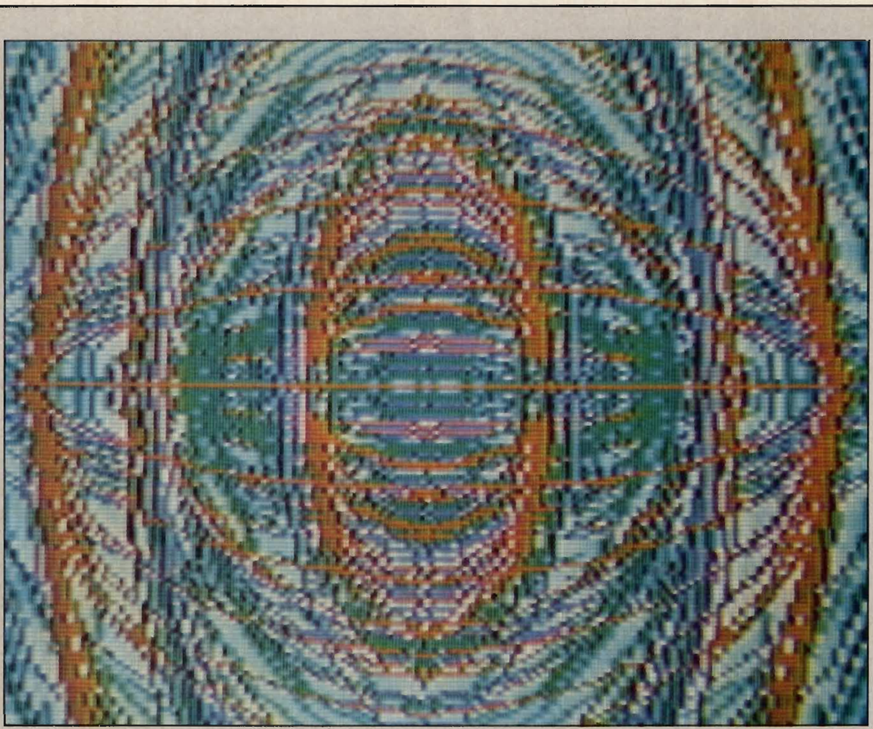
For details on sending in programs, see the last page of BASIC Training. ENTER will accept communications through The Source, CompuServe and the U.S. Postal Service. However, intergalactic hyperspace relays are not acceptable.

—*Richard Chevat, Technical Editor*

TRS-80 COLOR COMPUTER: PAINTING IN CIRCLES

This program by Daniel E. Cohn turns your TRS-80 Color Computer with extended BASIC into a simple graphics design computer. With two joysticks, you can draw an endless variety of circles and ellipses in different colors and sizes.

One joystick controls the radius, and therefore the size, of the circles. The other joystick either flattens the circles or stretches them vertically. Pressing the button on either joystick will change the color of the circle being drawn. Pressing *both* will erase the screen. Keep at it, and you'll cover your screen with a rainbow of changing shapes and colors.



```
1   REM CIRCLE PAINTER
5   REM C IS COLOR, R IS
    RADIUS, HW IS
    HEIGHT/WIDTH RATIO
10  C = 1
20  PMODE 3,1: PCLS:
    SCREEN 1,1
30  PCLS
35  REM GET VALUES FROM
    TRIGGERS
40  X = PEEK(65280)
50  IF X = 254 OR X = 253 OR
    X = 126 OR X = 125 THEN
    C = C + 1
60  IF X = 252 OR X = 124
    THEN GOTO 30
70  IF C = 5 THEN C = 1
75  REM GET VALUES FROM
    JOYSTICKS
80  R = JOYSTK(0) + 2
90  HW = JOYSTK(3)/32
100 CIRCLE(128,96),R,C,HW,1,1
110 GOTO 40
```

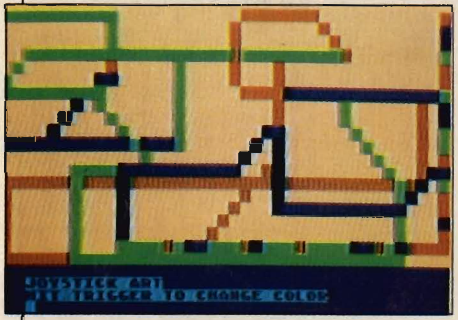
—*Daniel E. Cohn*

(BASIC Training continues on next page)

(BASIC Training cont. from previous page)

ATARI: PAINTING ON-LINE

With this program and one joystick, you can use your TV screen as a colorful sketch pad. Each time you run the program, it selects a different background color at random. Use your joystick to move a colored line up, down, diagonally, or around in circles. By hitting the trigger on your stick, you can change the color you're drawing with. Try holding down the trigger while you move the line across the screen; the colors will keep changing as you draw.



```
JOYSTICK ART
HIT TRIGGER TO CHANGE COLOR
```

NOTE: When you see the symbol § in the program, hit the key with the Atari symbol on the lower right of your keyboard. (On the XL models, it's the key in the lower righthand corner.) That makes everything that follows print in reverse. Hitting the key a second time returns you to normal printing.

```
10  REM JOYSTICK ART
20  X = 0:Y = 0
30  GRAPHICS 3
40  REM SET BACKGROUND
    COLOR
50  SETCOLOR 4,RND(1)*16,12
60  PRINT
70  PRINT "§JOYSTICK ART§"
75  PRINT "§HIT TRIGGER TO
    CHANGE COLOR§"
80  REM SET FOREGROUND
    COLOR
90  COLOR RND(1)*2 + 1
100 REM GET VALUE FROM
    JOYSTICK
110 S = STICK(0)
120 REM SET VALUES TO
    DRAW LINES
130 IF S = 5 THEN X1 = 1:Y1 = 1
135 IF S = 6 THEN X1 = 1:
    Y1 = -1
140 IF S = 7 THEN X1 = 1:
    Y1 = 0
145 IF S = 9 THEN X1 = -1:
    Y1 = 1
150 IF S = 10 THEN X1 = -1:
    Y1 = -1
155 IF S = 11 THEN X1 = -1:
    Y1 = 0
160 IF S = 13 THEN X1 = 0:
    Y1 = 1
165 IF S = 14 THEN X1 = 0:
    Y1 = -1
170 IF S = 15 THEN X1 = 0:
    Y1 = 0
175 X = X + X1
180 Y = Y + Y1
190 REM TO KEEP LINES ON
    SCREEN
200 IF X > 39 THEN X = 39
210 IF Y > 19 THEN Y = 19
220 IF X < 0 THEN X = 0
230 IF Y < 0 THEN Y = 0
240 PLOT X,Y
250 REM TO CHANGE
    COLOR
260 IF STRIG(0) = 0 THEN
    GOTO 80
270 GOTO 100
```

—*Seth Greenberg*

T.I. 99/4A: T.I. TUNES

This program turns eight keys on your T/I 99/4A computer into an electric piano. It's similar to our Commodore program this month, but this program was written by one of our readers—12-year-old Adam Hayes of Branchville, New Jersey. "T.I. Tunes" lets you adjust the volume and length of the notes by pressing keys 1 through 5.

Right now, the program lets you play one octave beginning with middle C. But you can change the range of the notes by changing the value of F (for frequency) on lines 310 through 450. Your T.I. Handbook will give the values for the notes you want.

You might try adding extra notes. With a little work, you can turn your whole keyboard into a music machine!

```
10   REM ELECTRONIC
     ORGAN
20   DIM KEYS(14)
30   CALL CLEAR
40   CALL SCREEN(3)
50   PRINT "ELECTRONIC
     ORGAN"
60   PRINT
70   PRINT "PRESS KEYS
     A,S,D,F,G,H,J,K
80   PRINT
90   PRINT "PRESS 1 OR 2 FOR
     VOLUME"
100  PRINT
110  PRINT "3, 4 OR 5 FOR
     DURATION"
120  PRINT
```

(Program continues on next page)

(Program continued from previous page)

```
130   PRINT "0 TO MAKE LAST
      NOTE FADE"
140   PRINT
150   PRINT "PRESS SPACE
      BAR TO END"
160   GOSUB 1000
170   REM D IS DURATION, V IS
      VOLUME, AND F IS
      FREQUENCY
180   D = -300
190   V = 0
200   CALL KEY(O,K,P)
210   IF K = 32 THEN 630
220   REM SELECT D,V, F
230   CALL KEY(O,A,S)
240   IF S = 0 THEN 200
250   FOR I = 1 TO 14 STEP 1
260   IF A = KEYS(I) THEN 300
270   NEXT I
280   GOTO 200
300   ON I GOTO 310, 330, 350,
      370, 390, 410, 430, 450, 480,
      500, 520, 540, 560, 580
310   F = 261.63
320   GOTO 460
330   F = 293.66
340   GOTO 460
350   F = 329.63
360   GOTO 460
370   F = 349.23
380   GOTO 460
390   F = 392
400   GOTO 460
410   F = 440
420   GOTO 460
430   F = 493.88
440   GOTO 460
450   F = 523.25
460   CALL SOUND(D,F, V)
470   GOTO 200
480   V = 0
490   GOTO 200
500   V = 9
510   GOTO 200
520   D = 100
530   GOTO 200
540   D = -300
550   GOTO 200
560   D = -1000
570   GOTO 200
580   V = 0
590   CALL SOUND(-1000,F, V)
600   V = V + 1
610   IF V = 30 THEN 180
620   GOTO 590
630   END
1000 REM READ DATA
1010 FOR I = 1 TO 14 STEP 1
1020 READ KEYS(I)
1030 NEXT I
1040 RETURN
2000 DATA 65, 83, 68, 70, 71, 72,
     74, 75, 49, 50, 51, 52, 53, 48
```

—*Adam Hayes*

COMMODORE 64: KEYBOARD PIANO

Here's a program that turns your Commodore 64 into an electric piano. Once you type it in and run it, you can play a tune on the middle row of keys (A through ;). And that's just the beginning. Hit the space bar and the tone of the notes changes. All together, this program—written by programmer Mark Sutton-Smith—lets you sing along with your Commodore in four different modes. About the only thing this program doesn't do is help you sing on key. NOTE: When you see the symbol ‡, hold down the SHIFT key and press CLR.

```
5    W = 16
10   S = 54272
20   FOR I = 0 TO 30
25   POKE S + I,0:NEXT
30   POKE S + 5,9
35   POKE S + 6,0
40   POKE S + 24,15
45   POKE 54275,8
50   DIM HI(11),LO(11),
     KEYS$(11)
60   FOR I = 1 TO 11
65   READ HI(I):NEXT
70   FOR I = 1 TO 11
75   READ LO(I):NEXT
80   FOR I = 1 TO 11
85   READ KEYS$(I):NEXT
90   GOTO 150
100 GET A$
105 IF A$ = "" THEN 100
110 FOR I = 1 TO 11
120 IF A$ = KEYS$(I) THEN 200
130 NEXT
140 IF A$ = "   " THEN W =
    2*W
145 IF W > 128 THEN W = 16
150 V = W/16
155 PRINT "‡"
160 IF V = 1 THEN PRINT
    "   TRIANGLE WAVE"
165 IF V = 2 THEN PRINT
    "   SAWTOOTH WAVE"
170 IF V = 4 THEN PRINT
    "   SQUARE WAVE"
175 IF V = 8 THEN PRINT
    "   WHITE NOISE"
180 POKE 53280,V
190 GOTO 100
200 POKE S,LO(I)
205 POKE S + 1,HI(I)
300 POKE S + 4,W
305 POKE S + 4,W + 1
310 GOTO 100
500 DATA 8, 9, 10, 11, 12, 14, 15,
    16, 18, 21, 22
510 DATA 97, 104, 143, 48, 143,
    24, 210, 195, 209, 31, 96
520 DATA "A", "S", "D", "F",
    "G", "H", "J"
530 DATA "K", "L", ":", ";"
```

—*Mark Sutton-Smith*

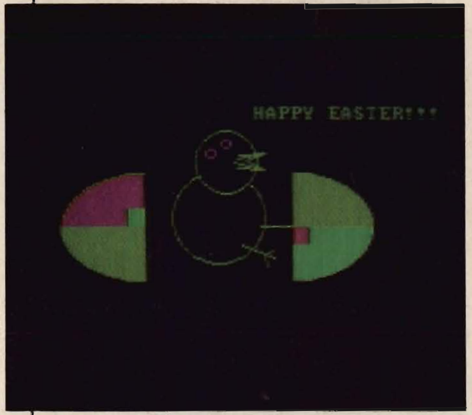
(BASIC Training continues on next page)

(BASIC Training cont. from previous page)

IBM PC: EASTER ANIMATION

Here's some simple animation with an Easter theme. It was written for the IBM-PC with a color graphics card by 16-year-old Bela Selendy.

As the program runs, first you see the outline of an egg. Then it becomes painted like an Easter egg. When you press "H" to hatch it, a chick appears and wishes you a "Happy Easter."



HAPPY EASTER!!!

Can you change or add to the program to get it to tell a whole story? How about showing the chick breaking out of its shell? Or adding the Easter Bunny or some other character? You might try getting the chick to respond to commands or questions typed in by the viewer. Don't get discouraged if it takes a few tries to get it right. Remember, even Walt Disney had to start someplace.

```
10  KEY OFF:CLS
20  SCREEN 1:LOCATE 6,12
30  PRINT "EASTER EGG"
40  FOR DELAY = 0 TO 1000
50  NEXT DELAY
60  CLS
70  PI = 3.141593
80  COLOR 8,1,0
90  F = 160:G = 100:F1 =
    160:G1 = 105
100 FOR G = 60 TO 100 STEP 5
110 CIRCLE (F,G),50,3,,,7/12
120 FOR Y = 0 TO 50:NEXT Y
130 CIRCLE (F,G),50,0,,,7/12
140 NEXT G
150 FOR T = 0 TO 15
160 CIRCLE (F,G),50,
    3,PI/2,3*PI/2,7/12
170 CIRCLE (F1,G1),50, 3,
    3*PI/2, PI/2, 7/12
180 LINE (F-50, G)-(F,G)
190 LINE (F1,G1)-(F1 + 50,G1)
200 LINE (F,76)-(F,134)
210 LINE (F1,76)-(F1,134)
220 LINE (F-10,G-10)-(F,G),,B
230 LINE (F1 + 10,G1 + 10)-
    (F1,G1),,B
240 PAINT (F-5,G-5),1,3
250 PAINT (F1 + 5,G1 + 5),2,3
260 PAINT (F-12,G-12),2,3
270 PAINT (F1 + 12,G1 + 12),
    1,3
280 PAINT (F-5,G + 5),3,3
290 PAINT (F1 + 5,G1-5),3,3
300 IF T = 0 THEN 530
310 IF T > 11 THEN 350
320 F = F-4:F1 = F1 + 4
330 CLS
340 NEXT T
350 CIRCLE (160, 100), 30, 3,
    1.3* PI/2, PI/4, 5/6
360 CIRCLE (165,70),20
370 LINE (170,70)-(190,74)
380 LINE -(178,69)
390 LINE -(191,65)
400 LINE -(172,68)
410 LINE (190,74)-(172,73)
420 LINE (191,65)-(173,66)
430 CIRCLE (155,65),3,2,,,5/6
440 CIRCLE (165,60),3,2,,,5/6
450 LINE (175,115)-(190,120)
460 LINE -(195,118)
470 LINE (196,122)-(190,120)
480 LINE -(191,127)
490 LINE (187,105)-(F1,105)
500 LOCATE 6,24
510 PRINT "HAPPY
    EASTER!!!"
520 GOTO 520
530 LOCATE 6,26
540 PRINT "HIT H TO HATCH"
550 A$ = INKEY$:IF A$ =
    ""THEN 550
560 GOTO 320
```

—Bela Selendy

APPLE: APRIL 1st ROBOT

This program is especially designed to run on April 1st, although it will work on any day of the year. It was written by 10-year-old Becky Frank of Burlington, Vermont. It's especially educational for anyone who thinks that computers are about to replace human beings. If you know someone like that—and we all do—just type in the program below, sit them down, and let the helpful "robot" do its work.

```
10    REM ROBOT
25    HOME:VTAB(5)
30    HTAB(15):PRINT
      "ROBOT"
35    HTAB(9):PRINT
      "CUSTOM DESIGNED
      FOR"
40    HTAB(9):PRINT
      "ANYONE WHO NEEDS
```

(Program continues on next page)

(Program continued from previous page)

```
     HELP"
45   FOR PAUSE = 1 TO 2500:
     NEXT PAUSE
50   REM CHOICES
55   HOME :VTAB(10):
     HTAB(5)
60   INPUT "PLEASE ENTER
     YOUR NAME:";N$
65   HOME:VTAB(10)
70   PRINT "IT'S NICE TO
     MEET YOU";N$
75   PRINT "I AM YOUR
     OBEDIENT SERVANT"
80   PRINT
85   PRINT "WHAT WOULD
     YOU LIKE ME TO DO?"
90   HTAB(5):PRINT
     "(C)LEAN THE HOUSE?"
95   HTAB(5):PRINT "(M)AKE
     YOUR BED?"
100  HTAB(5):PRINT "(W)ASH
     THE DISHES?"
105  HTAB(5):PRINT "(D)O
     YOUR HOMEWORK?"
110  HTAB(5):PRINT
     "(Q)UIT?"
115  PRINT
120  INPUT "ENTER THE
     LETTER OF YOUR
     CHOICE:";C$
125  IF C$ = "C" THEN
     GOSUB 1000
130  IF C$ = "M" THEN
     GOSUB 1500
135  IF C$ = "W" THEN
     GOSUB 2000
140  IF C$ = "D" THEN
     GOSUB 2500
145  IF C$ = "Q" THEN GOTO
     200
150  PRINT
155  PRINT "MAKE ANOTHER
     CHOICE."
160  GOTO 85
200  HOME:HTAB(4):
     VTAB(10)
205  PRINT "GREAT, I CAN
     USE A DAY OFF!"
210  END
1000 REM CLEAN HOUSE
1010 HOME:VTAB(10)
1020 PRINT "ARE YOU NUTS? I
     HATE CLEANING!"
1030 FOR PAUSE = 1 TO
     2500:NEXT PAUSE
1040 RETURN
1500 REM MAKE BED
1510 HOME:VTAB(10)
1520 PRINT "WHY SHOULD I?
     YOU SLEPT IN IT!"
1530 FOR PAUSE = 1 TO
     2500:NEXT PAUSE
1540 RETURN
2000 REM WASH DISHES
2010 HOME:VTAB(10)
2020 PRINT "AND GET
     DISHPAN HANDS? NO
     WAY!"
2030 FOR PAUSE = 1 TO
     2500:NEXT PAUSE
2040 RETURN
2500 REM DO HOMEWORK
2510 HOME:VTAB(10)
2520 PRINT "I'D RATHER PLAY
     A VIDEO GAME."
2530 FOR PAUSE = 1 TO
     2500:NEXT PAUSE
2540 RETURN
```

—Becky Frank

CHALLENGE #3: MOVING PICTURES

It seems like everyone with a home computer wants to be a video artist. We've received programs from readers that draw anything you can think of—cars, flowers, spaceships, aliens, even a golfer in mid-shot. But a program that draws a picture on your screen is just the beginning. The next step is making that picture move.

That's the theme of this month's challenge—animation. Of course, that can mean a lot of things. You might want to take that car, truck or spaceship and see if you can get it to move across your screen. Or, if you're really ambitious, try programming a simple game controlled by a joystick. Whatever you do, just remember—we want to see it *move!*

The Easter Egg program for the IBM- PC is one example of simple computer animation. Use your imagination to come up with ideas for your computer.

When you have a program you like, send it to: Challenge #3, ENTER, CTW, 1 Lincoln Plaza, New York, NY 10023. We'll pick favorites and print them in a future issue. If we print your program, we'll send you $50.

Programs can be for any home computer. Just remember to include a note telling us your name, age, address, the type of computer your program is written for, and your t-shirt size. Also, remember that our space is limited: keep your program under 100 lines if you want to see it in print.

SEND US YOUR PROGRAMS!

We'd also like to see any other programs you've written. Send them to BASIC Training at the address above. If we print one of yours, we'll also send you $50 and an ENTER t-shirt.

Well, that's your programming challenge for this month. Why are you standing still? Get moving!

(Continued from page 12)

difficult to see. We often found ourselves having grabbed a prize we never saw!

WRAP-UP

BERNIE: The fruit is an important part of this game and I wish it was easier to see. *Ms. Pac* tabletop just isn't as well done as *Q*Bert*.

PHIL: I found it just as enjoyable, though I see your point. This game has a lot going for it; it even holds the best score in memory.

◆◆◆

DONKEY KONG II

(Nintendo, $40)

"Fun, but I got fidgety for more." —Bernie

"I just don't think you can expect more than this."—Phil

This game is about the size of a deck of cards, and solves the problem of limited screen display by flipping open to reveal twin screens.

The baby ape must dodge snapjaws, climb a level, dodge across a ramp and climb a vine, from the bottom to the top screen.

In the top screen, baby ape must shimmy up four vines to unlock the chains that hold papa captive. This is where veterans of *Donkey Kong Junior* are in for a surprise. Nothing happens when you climb the chain unless you've grabbed a key from the lower screen. Meanwhile, the flying birds and crocodiles attack your character. The game has two skill levels.

DONKEY KONG II
GAME & WATCH
Nintendo

WRAP-UP

BERNIE: Once you understand the basic strategy, playing becomes trivial. But it's certainly a nice-looking game.

PHIL: Yes, the display was well done—using liquid crystal technology to give a nice illusion of depth. As for the game being trivial: I think these games are not meant to do much more than pass time.

◆◆◆

MONTY PLAYS SCRABBLE

(Ritam Corp., $150)

"Considering what it is, Monty *is pretty good."*—Phil

"But what it is is disappointing." —Bernie

Monty is a computer opponent for the popular board game, *Scrabble*. You can use it with a *Scrabble* board and tiles, or with the special pad included in the game. But be warned—you have to keep crossing out the letters you use and writing in the new letters.

Monty isn't much of an opponent, either. Despite a 12,000 word vocabulary, and extra chips that can increase this to 40,000, we didn't see many exotic words. It's not as challenging as playing with other *Scrabble* fans.

WRAP-UP

BERNIE: If I had another human player, I wouldn't include *Monty* in my game of *Scrabble*.

MONTY
Plays SCRABBLE brand crossword game
Portable Computer Console
A B C D E
F G H I J
K L M N O
P Q R S T
U V W X Y
Z ENTER
Ritam

PHIL: It's okay for beginning players. But it's too easy to call all Monty's plays illegal while you enter Z-J-F-X as your "word."

◆◆◆

ZAXXON

(Coleco, $40-45)

"It has the sound and the fury, but not the game play, of Zaxxon we know."—Bernie

"If I never play this game again, it won't be enough to erase the bad memory."—Phil

Trying to put *Zaxxon* into this format is like trying to raise moles in a penthouse—it just doesn't make sense.

Admittedly, you get a big machine for your money—it takes up one-third of a desk. The display screen is wonderful, and there are lots of walls to dodge and targets to shoot.

But tabletop *Zaxxon* isn't much fun to play because survival is a guessing game. You simply don't have enough control to pilot your plane through the obstacle course. Also, the joystick seems weak and liable to break off with heavy action.(We suspect, however, that this game will not see heavy action).

WRAP-UP

BERNIE: *Zaxxon* makes a lot of impressive noise and has nice graphics—but in game play, it's a real dog!

PHIL: I have to agree. This is the worst we've seen.

ZAXXON
SEGA
COLECO
FIRE
FIRE

◆◆◆

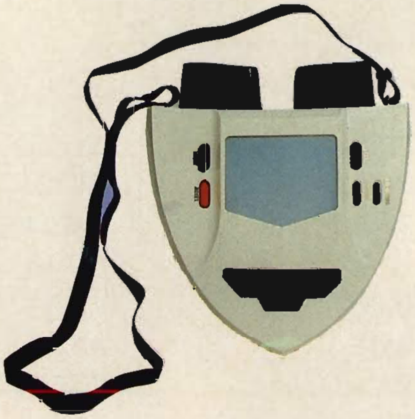
THUNDERING TURBO

(Tomy, $35)

"This is a nice use of 3-D technology for a game."—Phil
"But the game doesn't work as well as the illusion."—Bernie

The *Thundering Turbo* game looks like a pair of binoculars. Players look into these and use buttons on top to control the speed and location of their race car.

The game could be more complex, but the illusion of three-dimensional depth is very good, especially when the track bends off into the distance. The 3-D illusion is accomplished by showing the left eye a slightly different image from the right.



WRAP-UP

BERNIE: It's excellent technology, but the game itself is limited. We should point out that this game needs a light source.

PHIL: I enjoyed this little car race for its 3-D illusion and the high speed. I also enjoyed the *Sky Attack* game in this series, but not the *Planet Zeon* game.

◆◆◆

POPEYE GAME & WATCH AND OCTOPUS GAME & WATCH

(Nintendo, $28)

"They're cute, but neither had the strategic interest of 'Donkey Kong II.'"—Bernie
"I wouldn't buy one if I didn't want the clock/alarm."—Phil

The concept of combining a small game screen with a digital clock is nothing new, and neither are these two games.

GAME & WATCH
Nintendo
POPEYE
5:59
WIDE SCREEN
LEFT
RIGHT

Popeye is a very simple game, with a screen slightly smaller than a business card. Popeye sits in his rowboat between a dock and a ship. By pressing a small button with your thumb, you can maneuver him to the middle of the boat or hang him over either side. From the dock, Olive Oyl tosses bottles, pineapples, and cans of spinach that Popeye must catch. You also have to contend with Bluto, who can get close enough to hit Popeye.

Octopus is not as simple a game as *Popeye*. An octopus hovers over your boat in five positions with four deadly tentacles that grow and retract at random.

Your character, a diver, is manipulated with just two buttons. He can go in only two directions. You score by going to the treasure chest, retrieving a piece of treasure and returning to the surface. Or, you can repeatedly touch the treasure chest and get one point at a time, dodging the tentacle that guards the chest. It's a lot like playing chicken.

GAME & Watch
Nintendo
OCTOPUS
LEFT
RIGHT

WRAP-UP

BERNIE: Of the two games, *Octopus* has more play value.

PHIL: There's something about both these games I like: You can play them when you have free time.

BERNIE: But there's no way to turn off the sound. You can't sneak a game in study hall! ◘

PENCIL CRUNCHERS

COMPUTALK

BY REBECCA HERMAN

Hidden in the box below are 33 computer phrases: they may be spelled across, up and down, diagonally, and even backwards. We've circled one word to get you started. Once you've finished the word hunt, start at the top of the puzzle and read the uncircled letters from left to right. They'll spell out a fact from computer history.

- ADD
- BACKUP
- BINARY
- BUG
- BUS
- BYTE
- DATA
- DIGITAL
- END
- ENTER
- FLOWCHART
- GLITCH
- GOSUB
- GOTO
- HACKER
- HOME
- IF...THEN
- INPUT
- INTERFACE
- LIST
- LOAD
- MATRIX
- NEW
- OUTPUT
- PIXEL
- PRINTOUT
- PROGRAM
- RETURN
- RUN
- STOP
- STORAGE
- SYNTAX ERROR
- VECTOR

(Answers on page 64)

F	T	H	E	F	E	C	A	F	R	E	T	N	I	I	R
S	L	T	C	O	N	M	P	N	U	T	B	E	R	W	A
S	O	O	D	E	D	V	E	E	S	U	B	L	O	P	E
D	A	F	W	O	R	H	T	Y	S	U	Y	E	A	Y	P
R	D	S	A	C	T	G	E	O	G	O	T	O	O	R	R
B	I	T	W	F	H	A	G	L	I	T	C	H	I	A	O
A	S	N	I	A	M	A	A	I	E	D	O	N	E	N	G
C	N	H	A	C	K	E	R	S	I	M	T	A	D	I	R
K	D	C	T	H	A	O	O	T	E	O	T	S	A	B	A
U	I	T	A	N	T	D	T	S	U	X	I	R	T	A	M
P	G	F	O	C	R	E	S	T	O	P	L	E	A	C	T
R	I	O	E	N	I	C	P	N	U	N	N	M	E	R	I
C	T	V	B	A	L	U	I	I	N	T	U	I	E	G	R
A	A	S	Y	N	T	A	X	E	R	R	O	R	T	O	R
A	L	N	T	D	C	O	E	M	P	R	E	T	U	R	N
U	T	W	E	N	E	R	L	E	N	T	E	R	D	D	A

FEEDBACK

(Continued from page 5)

TIME FOR TIMEX

I would like to know why you do not have programs for the Timex Sinclair 1000 in "Basic Training."

Many of us have Timex(es) since we can't afford the more expensive models.

Could you include more programs for the Timex Sinclair 1000 or make adaptations available?

—Matt Wellen
Highland, IL

Dear Matt:

You're right. We have been shortchanging Timex computer owners. We plan to correct the oversight by running a program for the Timex 1000 in every issue of ENTER, beginning next month. Sorry for taking so long. —Ed.

AUTOMAN ARTICLE

I would like you to write an article on the new show *Automan* (ABC) and on the movie *Tron*.

—Andy Jones
Wichita, KS

Dear Andy:

You're in luck. There's an article on Automan *in our new section called "Show Beat." It's interesting that you spotted the similarities between* Automan *and the 1982 Walt Disney movie* Tron. *In fact, they share the same producer, Don Kushner.*

LIGHT READING

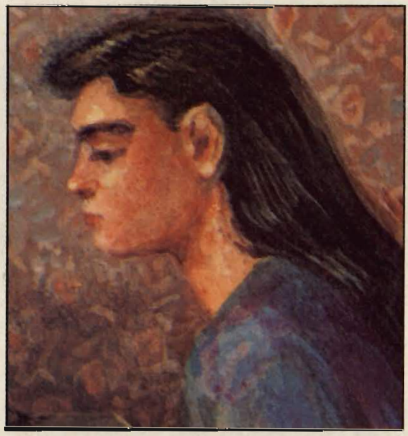
I really like all of your magazines. One article that I thought was really good was "The Light Fantastic" (November 1983). It was neat how the girl was saved by the lasers. In my science class we had to do a two-minute talk on any science article. I chose this one... I hope you have more articles like (it).

—Tamseel Mir
Fullerton, CA

MORE MYSTERIES

I really enjoyed your Computer Mystery, "The Case of the Hungry House" (Dec./Jan. '84 and Feb. '84). I think it would be neat if you had more of them.

—Todd Arnett
Burke, VA



© THOMAS WOODRUFF

Dear Todd:

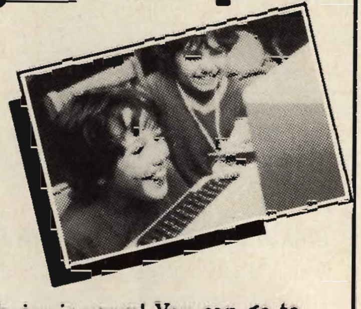
Thanks for the kind words. There will be another Katie Parker Computer Mystery in ENTER soon.—Ed.

WRITE TO US!

We'd like to hear from you. Your ideas, questions and criticisms will help us make ENTER a better magazine. Send your letters to:

FEEDBACK
ENTER Magazine/CTW
1 Lincoln Plaza
New York, NY 10023

Anywhere else is just a camp.



The choice is yours! You can go to just any summer camp or you can go to an Atari Computer Camp.

Atari Computer Camps offer a full program of sports and recreational activities and state-of-the-art computer instruction. And, that's something you can't find at just *any* camp.

Coed, ages 10-16 years,

2 through 8 week sessions available.

ATARI COMPUTER CAMPS
A Warner Communications Company.

CALL TOLL FREE 800/847-4180
IN N.Y. STATE CALL COLLECT 212/889-5200
For more information and a free, color brochure, write to 40 East 34th Street, Dept. ER, New York, N.Y. 10016. Outside U.S. or in New York State, call collect 212/889-5200. Staff applicants should apply in writing.

© 1984 Atari, Inc. all rights reserved.

EDUCATIONAL GAME PROGRAMS for the GIFTED and TALENTED

THE MINDSTRETCHER SERIES

This popular series was specifically designed for gifted and talented students in grades 3 through 9. Talented students do not just play games; they look for winning strategies; they analyze patterns; they develop charts of the previous moves made; they are challenged to use analytical problem solving techniques to solve these interesting, entertaining and educational puzzles.

1. *JIGSAW - A total of 12 to 16 puzzles ranging from views of famous cities to works of art.*
2. *TRAFFIC JAM/CHAIN REACTION Develop a winning strategy by predicting future moves.*
3. *RUBIK/CANDLES - Both programs allow students to choose various levels of difficulty.*
4. *BLACK/KAYLES - Student interaction with games of strategy and mathematical theories.*
5. *JINX/WELTER - Exploratory activities allowing students to develop their own patterns.*

Available Apple, PET, Commodore 64
$25.00 ea. $125.00 per set ...... Disk
$20.00 ea. $100.00 per set .. Cassette

ISLAND SOFTWARE
P.O. BOX 300 Dept. O
Lake Grove, NY 11755
516/585-3755
VISA & Mastercard Accepted

NEXT

COMING IN OUR MAY ISSUE:

MAKING MONEY WITH YOUR COMPUTER: You can work in a computer store, design special programs, or try a dozen other ways to earn money with your computer. ENTER talks with kids who have computer jobs, and gives you job ideas and hints on how to get started yourself.

DIARY OF A YOUNG DESIGNER: Eric Babinet's project turned into PDI Software's *Star Crystals*. ENTER takes you through 16-year-old Eric's long—and successful—struggle to sell his game; and looks at a young game designer who didn't fare so well.

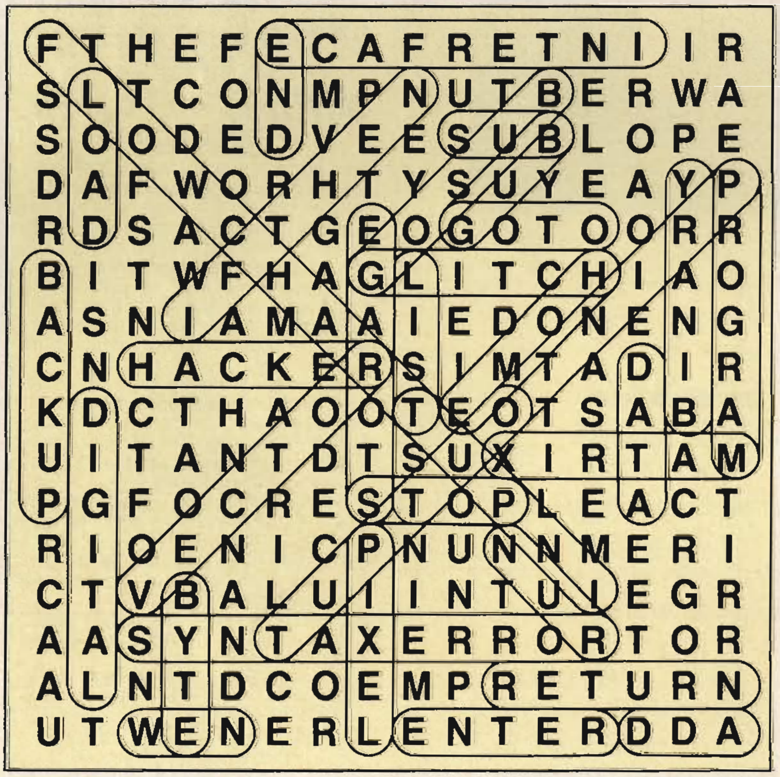
BATS AND BYTES: Computers are a hit in big league baseball. We go into the dugout to discover how some of the country's top teams are using data bases to help them round the bases...Plus a computer program that lets you rate the top ballplayers.

GO WITH THE FLOW: Can you get there from here? ENTER's flow chart puzzle puts you through the paces.

PLUS: What's cooking with the Kitchens? A visit with the three Kitchen brothers who design hit software for Activision...CD: The records you play using a laser and a computer...Hot news in News Beat, Show Beat and Pacesetters...And programming for six kinds of computers.

ANSWERS

COMPUTALK *(page 62)*



```
F T H E F E C A F R E T N I I R
S L T C O N M P N U T B E R W A
S O O D E D V E E S U B L O P E
D A F W O R H T Y S U Y E A Y P
R D S A C T G E O G O T O O R R
B I T W F H A G L I T C H I A O
A S N I A M A A I E D O N E N G
C N H A C K E R S I M T A D I R
K D C T H A O O T E O T S A B A
U I T A N T D T S U X I R T A M
P G F O C R E S T O P L E A C T
R I O E N I C P N U N N M E R I
C T V B A L U I I N T U I E G R
A A S Y N T A X E R R O R T O R
A L N T D C O E M P R E T U R N
U T W E N E R L E N T E R D D A
```

SOLUTION: The first computer was developed forty years ago. It was named ENIAC. That stands for Electronic Numerical Integrator And Computer.

THANK YOU

ENTER would like to thank the following schools for their help:

Academy of Environmental Science, New York, NY;
Challand Junior High, Sterling, IL;
Creative Learning Community, New York, NY;
Ethical Culture School, New York, NY;
Lincoln School, Sterling, IL;
Rochambeau Middle School, Southbury, CT;
Tenafly Middle School, Tenafly, NJ;
Walden School, New York, NY.

ORDER SOME FUN TODAY!

ORDER THE ELECTRIC COMPANY.

SESAME STREET
THE ELECTRIC COMPANY MAGAZINE
MISS PIGGY!
Our favorite valentine has some valentines

For ages 6-10

☐ Please send a 1 year (10 issues) subscription for only **$9.95.**

☐ Please send a 2 year (20 issues) subscription for only **$18.95.**

Best Buy

8GKG0

CHILD'S NAME AGE

ADDRESS

CITY STATE ZIP

PARENT'S SIGNATURE

☐ Payment enclosed. ☐ Bill me later.

Subscriptions to Canada and other countries, add $6.00 per year. Remit in U.S. currency only. Allow 6 to 8 weeks for delivery.

Order 3-2-1 CONTACT™

For Fun, Facts and Entertainment

☐ Please send 1 year (10 issues) of 3-2-1 Contact for only **$10.95.**

☐ I prefer 2 years (20 issues) for only **$19.95.**

Best Buy

For ages 8–12.

CHILD'S NAME AGE

ADDRESS

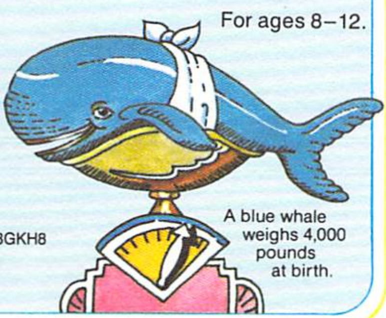
CITY STATE ZIP

PARENT'S SIGNATURE

8GKH8

☐ Payment enclosed. ☐ Bill me later.

Subscriptions to Canada and other countries add $6.00 per year. Please remit in U.S. currency. Allow 6-8 weeks for delivery.



A blue whale weighs 4,000 pounds at birth.

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 194 BOULDER, CO.

POSTAGE WILL BE PAID BY ADDRESSEE

The Electric Company Magazine
200 Watt Street
P.O. Box 2923
Boulder, CO 80321

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 195 BOULDER, CO.

POSTAGE WILL BE PAID BY ADDRESSEE

3-2-1 Contact Magazine
E=MC Square
P.O. Box 2932
Boulder, CO 80321

When you go in search of The Most Amazing Thing, don't expect to be home by dinner time.

Finding The Most Amazing Thing in the Whole Wide Galaxy isn't something you can do quickly.

In fact, you'll get so wrapped up in this computer game that you may have trouble coming back down to earth.

For starters, you get to fly, drive, bargain, eat, sleep, compose music, drill for oil, and speak 25 different languages.

Sound tough? Relax. You'll have the help of your old Uncle Smoke Bailey. He'll give you a B-liner (sort of a cross between a hot-air balloon and a dune buggy) to use on your journey. And he'll teach you about the Mire People and the strange languages they speak.

You'll visit the Metallican Auction, where you'll trade with tricky aliens. You'll shop for gadgets and gizmos to outfit the B-liner.

And you're off—in search of The Most Amazing Thing!

It will take time to find it.

But it'll be the best time you ever had.

IN SEARCH OF THE MOST AMAZING THING™ can be played on **Apple,® IBM,® Atari,®** and **Commodore 64™** computers. To get started, see your local software retailer.

IN SEARCH OF THE MOST AMAZING THING
SPINNAKER

SPINNAKER™
We make learning fun.

©1983, Spinnaker Software Corp. All rights reserved. Apple, IBM and Atari are registered trademarks of Apple Computer, Inc., International Business Machines Corp. and Atari, Inc., respectively. Commodore 64 is a trademark of Commodore Electronics Limited. IN SEARCH OF THE MOST AMAZING THING computer program is a trademark of Spinnaker Software Corp.

REMEMBER.

ELEPHANT
MEMORY
SYSTEMS
®

ELEPHANT™ NEVER FORGETS.

A full line of top-quality floppies, in virtually every 5 1/4" and 8" model, for compatibility with virtually every computer on the market. Guaranteed to meet or exceed every industry standard, certified 100% error-free and problem-free, and to maintain its quality for at least 12 million passes (or over a lifetime of heavy-duty use).

Contact Dennison Computer Supplies, Inc., 55 Providence Highway, Norwood, MA 02062 or call toll-free 1-800-343-8413.
In Massachusetts, call collect (617) 769-8150. Telex 951-624.

Dennison